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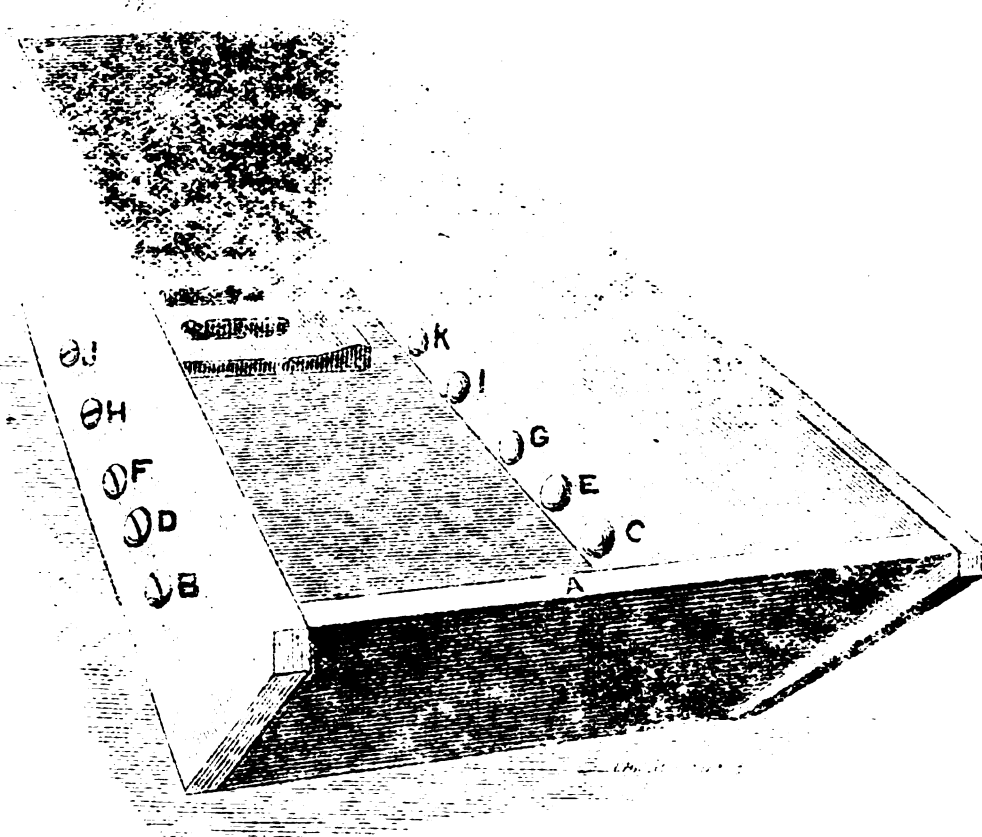
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Therapeutic use of faradaic and galvanic currents in the ...

Justin Hayes

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THERAPEUTIC USE
OF
FARADAIC AND GALVANIC CURRENTS
IN THE
ELECTRO-THERMAL BATH,
WITH
HISTORY OF CASES.

By JUSTIN HAYES, M. D.

"THE WEALTH OF MAN IS THE NUMBER OF THINGS HE LOVES AND BLESSES,
WHICH HE IS LOVED AND BLESSED BY."—*Carlyle*.

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PREFACE.

FROM an experience of over fifteen years in the almost daily use of the Electro-Thermal Bath I am pleased to give to the profession a few examples of my success in its use in the treatment of diseases, and shall try to avoid any repetition in the cases given, furnishing examples to practitioners without prolixity. During my investigation of its use *I am confident that, as an auxiliary in the treatment of diseases of woman, it is a boon of greater value to her than has been discovered during the last fifty years.* On this subject I invite the severest criticism of the profession. In the use of dry electricity and the galvano-cautery there is no lack of good authors, but I know of no work of valuable authority on its use in the bath.

The electrodes in the bath and their connections on the key-board (of different manufac-

turers) may differ in their mechanical construction, yet are in principle the same. Although electricity has in its various forms of medical and surgical uses an important place in the treatment of diseases in my practice, I have ever held it as an auxiliary to the best means of our profession, ignoring hobbies in every department.

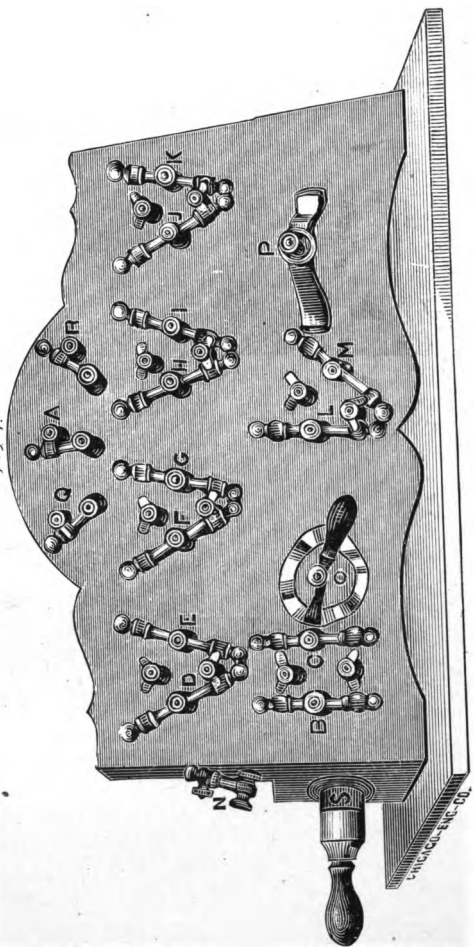
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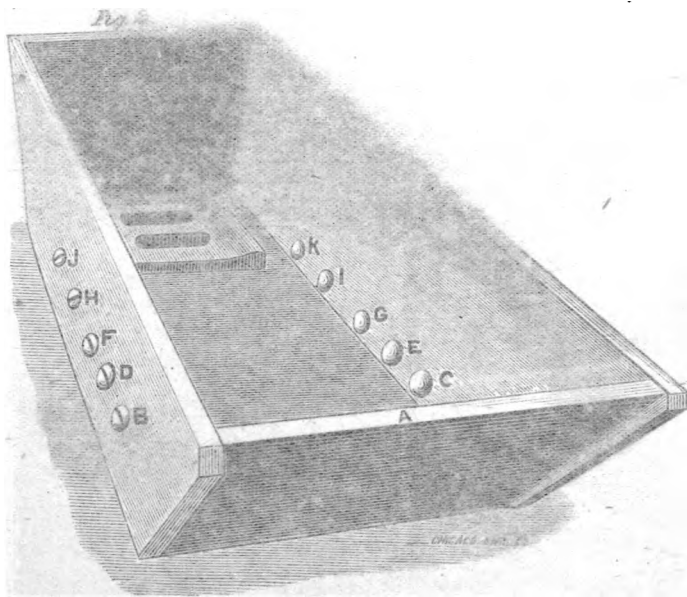
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Fig 1.





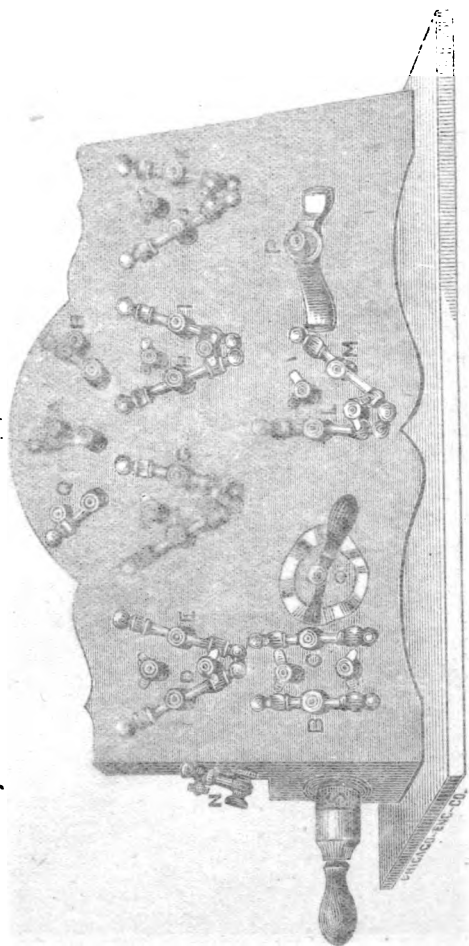
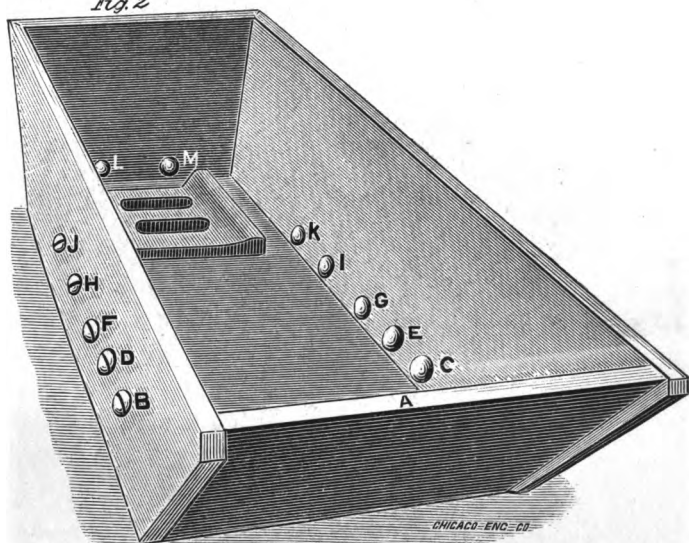


Fig. 2



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THERAPEUTIC USE OF
FARADAIC AND GALVANIC CURRENTS
IN THE
ELECTRO-THERMAL BATH.

IN the engravings, Figure 1 represents the helix and key-board, and Figure 2 the electro-thermal bath tub. The letters by the switches on the key-board, and electrodes in the tub, are arranged alphabetically, except the switches Q and R, which represent the off currents, and N, which connects the battery current with the helix. The switch A is connected by a wire to the head-plate A in the tub; the switches B C are connected with the B C electrodes in the tub; and so on in alphabetical order till you reach the foot electrodes L and M. O represents the commutator or current-changer; P the rheotome, and S the electro-magnet or core. The head-plate, or electrode, is a piece of sheet copper, the form oblong, and breadth seven inches; this is attached to the center of the head of the tub, and covered by a perforated board; over

this is placed a rubber cloth insulator, to protect the spine from the direct action of the current; this insulator may be narrowed at pleasure by rolling it on the sides, so the current may approach still nearer to the spinal cord when the condition of the patient indicates it; in cases where the current should be applied directly to the spine, while lying in the bath, it should be removed.

GENERAL CURRENTS IN THE ELECTRO-THERMAL BATH.

These currents are termed *general* because they are given off from so many electrodes, consequently exerting a general influence on the whole system, tranquilizing and producing tonic, and stimulating; or sedative and depressing effects, according to the strength and duration of the applied currents. The switches on Figure 1 are set for the general currents; these are the currents that are used when the patient is first placed in the bath, and are switched on before the patient comes out, let the other treatment during the time they are in the bath be as varied as it may be. The head-plate is positive, and all the other electrodes in the tub are negative. In cases where the negative bath is required in the beginning of the treatment (which is the exception), raise the handle of the commutator; this reverses the currents, making the head-plate negative and the other electrodes positive. To make it a galvanic bath, insulate one arm of the commutator by slipping a piece of paper under it, and

connect the galvanic battery to the key-board, having another commutator and current selector for this current, and you are enabled to make all the changes in directing this current that you are with the induced current in the electro-thermal bath first mentioned. The galvanic current should be so connected with the cells of the battery that you may add from one to three elements at a time, till you have the desired amount. It is also quite necessary to have the current connected with a galvanometer, that you may know the strength of the current, when it is conducted to the bath; and when treating very sensitive patients the rheostat should be connected, for this current is one that will do great good or great harm, according to its use; and the physician should always know the amount that he is using, and closely observe the immediate effect upon his patient before leaving him in the hands of the operator. The two coils, which enter into the construction of the faradaic apparatus from which the induced currents for the electro-thermal bath are obtained, are composed of thick and short wire, which give a quantity rather than intensity current. The helix and key-board represented in Figure 1 were made to the order of the late Dr. Young, of Cleveland, Ohio, with the exception of an increased number of keys, which I have added to meet the improvements I have made in the tub electrodes, (which improvements are offered to the profession free of

charge.) Dr. Young patented his invention, and it is now held by Dr. John C. Mairs, Steubenville, Ohio.

Fifteen years ago, while residing in Cleveland, Ohio, I was invited by Dr. Young to observe the effects of the electro-thermal bath on his patients, which I did occasionally for about six months. Although his theory as to the bath "reproducing diseases" was erroneous, and his treatment hap-hazard, I became convinced that his invention was an advance over anything of the kind that I had a knowledge of, and that its efficacy in treating diseases that the bath was appropriate for, might prove a great success when properly prescribed and used by scientific physicians. I purchased two baths and the apparatus pertaining thereto, which were somewhat similar, and after using them for a few months I discarded one, and have made my improvements from the one previously mentioned.

As there has been no scientific work or essay on the use of the electro-thermal bath, (embracing the use of induced and galvanic currents in such a bath,) I desire to place some of my experience before the profession. At the same time I wish to be understood that in my practice I have ever eschewed hobby-riding, and sought the best means of the profession for my patients.

To prepare the electro-thermal bath for a patient, it is necessary to know if the patient is very sensitive to warm or cool water; the bath should be of a temperature to meet the feelings of the patient pleasantly

on first going into it. As a general rule it should be prepared at 98° Fahrenheit, and gradually increased till it reaches in some extreme cases 110°; the guide for increasing the temperature must be the patient's feelings, as no one set rule can be given for every case. The time in the bath ranges from eight to thirty minutes; the effects of this bath will serve as a guide to the time occupied in subsequent treatment of the case. The patient lies down in the bath, being covered at the same time with a Canton flannel sheet, the head resting on a sponge which is under or on napkins folded above the insulator, the feet resting against the foot of the tub, unless the patient is too short to reach it, then they should be supported by a foot-adjuster; a small napkin wet in cold water, wrung out so as not to drip, should be placed on the forehead; then turn the switch N on to the post, as shown in Figure 1; this sends the currents at once through the water to the patient. Before connecting the current to the helix, be sure that the core is nearly out of the coil, so that the patient will not receive too much of the current in the beginning, and, to make this doubly sure, when through treating a patient, disconnect switch A, as well as N, so that when you begin to treat the next patient, should you forget to withdraw the core in starting the machine, the patient will receive no electricity till you connect the head-plate by the switch A, and this will be very sure to call the attention of the operator to the position of the core.

DIRECTIONS FOR GIVING THE ELECTRO-THERMAL BATH IN
GENERAL DEBILITY.

As soon as the currents are conducted to the patient, the operator should at once commence dipping with a handled dipper which holds about one quart, pouring the water gently on the upper part of the chest, beginning on the opposite side of the patient, and bringing it around to the side next the front of the tub; this is continued more or less during the treatment. Increase the temperature of the water from the beginning, by a small stream, till the patient feels warm enough; push the core in to give the current intensity enough to be perceptible to the patient. These currents should be continued from three to five minutes, then take the electrode connected with the positive off-current R, place it on a soft wet sponge, turn the sheet down to the hips, throw off switch A, grasp the sponge firmly in the hand, and apply the back of the fingers over the region of the liver — that the operator may feel the strength of the current, and test the sensibility of the patient to its action; if it gives no pain, apply the sponge, pressing it gently, carrying it over the spleen, then downwards in the course of the descending colon to the left iliac fossa, passing across the lower part of the abdomen to the right iliac fossa, and from here up the course of the ascending colon, continuing over the transverse colon and the small intestines; then apply it, as in the beginning, over the

region of the liver, repeating the manipulation three or four times; then spread the sheet back over the chest, switch on A, as in the beginning of the treatment, and proceed as at first, until one minute before the expiration of the time; then place your hand under the neck to assist the patient in sitting up in the tub; then throw off switch A; take the electrode connected with the positive off-current R, place it in the sponge, and press the sponge on the nape of the neck a little one side of the spine, carrying it down the whole length of the back, alternating from side to side from three to five times, carrying it *near* the spine but not directly on it. This finishes the bath, given in general debility.

The patient should be well dried off, and afterwards rubbed with the dry hand if there is any chilliness. A small handful of salt is usually thrown into the bath, unless iron is indicated in the case; then use from one to two ounces of the following solution:

- | | |
|---------------------------------|---------|
| 1. R Ferri Sulphatis, | ℥j. |
| Acidi Sulphurici, | ℥ iij. |
| Aquæ puræ, | ℥ viij. |

M.

S. Use in each bath from one to two ounces.

Several years ago, in giving the iron bath, I used from one to two drachms ferri sulphatis, making the bath turbid, and staining everything it came in contact with; thus making it necessary for the patient to take another bath of clear water to free the surface of

- the body from the iron stains. At that time Mr. Varley, of London, the electrician of the Atlantic Cable Company, was receiving my treatment. One of the remedies prescribed was the electrical iron bath; when he learned how it was prepared, he said that in his experiments he had discovered how to make a water solution of the ferri sulphatis clear, by adding acidi sulphurici, so that it would not stain a piece of white linen when dipped in it. From his suggestion the above formula was made.

HISTORY OF CASES.

CASE I.

GENERAL DEBILITY.

Mr. E., a resident of Chicago, came to me in July, 1871, for treatment. He was about forty years of age, of good habits, and was suffering from general debility without any apparent cause; he was not over-taxed in any way, as his business required no more of his time than he chose to give it—the pulse feeble, about sixty-four per minute; tongue slightly furred; did not suffer pain; complained of nothing but weariness and want of ambition, and felt worse about 11 A. M., showing a slight climatical periodicity; had a poor appetite most of the time; when he did relish his food and eat to satiety felt heavy and less disposition to exercise; bowels torpid, and skin inclined to be dry; urine normal, but a little less in quantity than when in health; slept well the first of the night, but restless and uneasy the latter part of it. I prescribed the electro-thermal bath with iron, as previously directed for cases of general debility; time in bath ten minutes; advised him to take another the next day,

which he did; he slept a little better and was not quite as stupid at 11 A.M. I prescribed, in connection with this treatment, the following:

2. R Quinæ Sulphatis, gr. xij.
 Piperinæ, gr. iiij.

M. Fiat pulv. No. xij.

S. Take one at meals and bed time.

Advised him to come in the day following for treatment. On his return the third day he said he felt but little better, and feared it was not the right treatment for him — was afraid the warm water would make him weak. I said to him that I was confident if he would continue treatment for eight or ten days, he would be pretty well. I prescribed the foot-bath, with the *vitalized* treatment, to be alternated with the electro-thermal bath, as previously given. The vitalized treatment was given, as follows: His feet were placed in a foot bath at 98° Fahrenheit, and gradually raised to 101°, with the negative electrode in the water, the positive electrode in a soft sponge and placed by the operator over the region of the liver — with an intensity current appreciable to the patient — from here it was passed over the right pectoralis major muscle, across the chest to the left pectoralis major muscle, down the side over the spleen to the left iliac fossa, across the lower part of the abdomen to the right iliac fossa, up the ascending colon and over the transverse, finishing the circuit over the small intestines. This

was repeated twice, then the sponge was grasped in the left hand of the operator, the right hand carried slowly over the chest and abdomen, following the same course as the sponge, for four or five times. Then the sponge with the positive electrode was placed on the nape of the neck, one side of the spine, and was carried down the whole length of the spine, alternating twice from side to side. This was followed by using the hand for an electrode as in treating the chest and abdomen, carrying the hand over the spine, as well as at each side. The treatment was concluded by the patient holding the sponge with the positive electrode for three minutes — time of treatment being twelve minutes. The tenth day he was so well that he required no more treatment.

CASE II.

INTRA-MURAL FIBROUS TUMOR.

Mrs. E., aged forty-two years, from the central part of the State; came for treatment in the spring of 1867 (the exact date I am unable to give, being destroyed in the fire, October 9, 1871), suffering with intramural fibrous tumor, and menorrhagia. Upon examination, I found the case to be a very serious one, and advised her husband to get a physician who had experience in the treatment of ladies, for counsel. Dr. De-

Laskie Miller was called; his diagnosis concurred with mine as to the nature of the tumor. He thought her general health might be improved — had but little, if any, encouragement to give as to removing the tumor. As to the use of electricity in such cases, he had had no experience; suggested the use of iodine externally over the abdomen, and iodide and bromide potassa internally; which was given according to the following formula:

3. R Potassii Iodidi, }
 Potassii Bromidi, }
 'Syr. Sarsaparillæ Comp., 3 viij.

M.

S. Take one teaspoonful three times a day.

Upon examining the uterus, the os was found in an irregular nodulated condition, and within one inch of the labia majora, the os tincæ opened so that it would admit the index finger three-quarters of an inch; the uterus was about the size of a quart bowl, and irregular in form. In the year 1848 she commenced having profuse hæmorrhage at her menstrual period, lasting from one to three weeks; this continued up to the time she came to consult me. Some of her physicians had ascertained that she had a tumor, and within four or five years previous to her coming to me she could both see and feel the enlargement above the pubis. She was very much emaciated, exhausted and mentally depressed; and as she never had received any permanent benefit from her physicians, did not expect it

now. The treatment was commenced by applying iodine over the abdomen, then taking the electro-thermal bath with iron, commencing with the currents as recommended in general debility; a vaginal injection of tepid water, as soon as she was comfortable in the bath, this followed by a bromine wash, according to the following formula:

4. R Bromine, gtt. viij.
 Aquæ Dist., ℥ iij.

M.

S. Use one teaspoonful in two tablespoonsful of tepid water once a day.

After taking the general currents three minutes, having the temperature properly increased, all the switches that carried the currents to the tub were disconnected except F; then G was connected to the upper post, making a concentrated transverse current through the abdomen to the tumor; changing the direction of the currents, by changing the commutator, alternating from positive to negative, and negative to positive, four or five times, with an intensity current that caused a perceptible motion of the abdomen from side to side, when the current was changed; this was continued two minutes, then G was disconnected from the upper post, the operator taking the positive off-current R, placing the electrode in a sponge, pressing it firmly over the tumor on the opposite side of the abdomen from the F electrode, which is connected with the F switch; changing the commutator four or

five times; then disconnecting F and connecting J and K, as shown in Figure 1, placing the sponge with the positive electrode on the abdomen over the upper part of the tumor; this was continued two minutes; then the switches were connected for the general currents, as in Figure 1; these were continued two minutes, and the treatment was concluded by sponging the back as previously directed. This treatment was repeated daily for one week, when her menses appeared; they were less than usual at the commencement, and the hæmorrhage was much less; the fifth day I placed a tampon of cotton containing ferri subsulphatis, gr. iij, zinci sulphatis, dried, gr. ij, and introduced it as far up as I could in the os uteri. The sixth day there was very little hæmorrhage; the seventh she was able to resume the former treatment, which was continued till her menses appeared again; at this time they were nearly normal, and she was not confined to her room at all during this period. The flow ceased the sixth day from commencement. On the fifth day I prescribed the vitalized treatment, with foot-bath as previously described, with this exception; the positive electrode was in the foot-bath and the negative in the hand of the operator, until the last three minutes of the treatment, when the negative electrode was placed in the hands of the patient; this was continued two minutes, when the current was reversed and this continued one minute; this concluded the treatment. The

following day it was repeated. The seventh day she resumed again the former treatment.

She was under treatment eight weeks, when she left for home, promising to return if she was worse. The uterus was diminished about one-third in size, and her general health very much improved. She returned four or five months afterwards. I then made an examination and found the tumor still smaller than when she left; as she was feeling quite well she wished to remain only for a few days' treatment. I heard from her a few months since; then she was attending to her household duties and felt no inconvenience from her former trouble.

CASE III.

SUB-PERITONEAL FIBROID TUMOR OF THE UTERUS.

Mrs. I., of Lansing, Mich., age thirty-eight years, came to consult me October 7, 1871. On examination I found she had a sub-peritoneal fibrous tumor of the uterus, large enough to be plainly seen and felt above the pubes. There was antelexion of the womb, and it seemed firmly held, so that it could not be moved without considerable pressure; the right ovary was enlarged, her menses as to quantity and time were nearly normal, and attended with but little pain. Slight exertion in walking produced severe pain

through the hypogastric region. I said to her I thought I could arrest the growth of the tumor, and possibly destroy it. She made arrangements to place herself under my care October 9th, but did not do so in consequence of the great fire, until January 24, 1872. On examination at this time, I found the tumor somewhat increased in size, the condition in other respects about the same. I prescribed the treatment given in Case 1, except the occasional use of the short vaginal electrode connected with the off-current Q, and placing the sponge with the off-current R on the abdomen over the tumor, alternating the current by changing the commutator four or five times; this manipulation continued from one to two minutes. In the place of the bromine wash in Case 1, the following was used:

5. R Acidi Carbolici, (cryst.) 3j.
 Glycerinæ, ʒ ij.
 Aquæ Dist., ʒ iiij.

M.

S. Use as a wash, one teaspoonful in two tablepoonsful of tepid water, once a day.

This treatment was given every day for ten weeks, except Sundays, and during her menstrual period she received the vitalized treatment. At this time a marked change, in the lessening of the tumor, was perceptible; this progressed quite rapidly for three or four days, so that there was hardly anything to be felt above the pubes; the os uteri was nearly normal, and

the uterus could be easily moved about; the enlargement of the ovary had almost entirely disappeared. She received treatment until May 31, 1872. At this time the uterus was about the normal size. I heard from her a few months since, when she said she did not perceive any change in the condition of the uterus.

CASE IV.

ABDOMINAL TUMOR, WITH SYMPTOMS OF CEREBRAL APOPLEXY.

Mrs. G., of Odell, Illinois, aged forty years, came to me for treatment October 15, 1862. She was above medium size, nervous sanguine temperament predominating; intellectual, with a finely balanced brain, but was very sensitive from her earliest recollections to suffering, and to the opinion of others. She was unable to walk, but could stand up with assistance; she seemed to have strength enough to walk, but not the power of coördination. Most of the time she felt a dizzy or swimming sensation, whether sitting or lying. There was a tumor in her right side extending from just below the ribs to the median line of the abdomen, reaching near the crest of the ilium; it felt quite hard and firmly fixed in its position, and did not seem to be connected with the liver or ovary. She discovered the tumor soon after the birth of a child,

twenty years previous; it was then quite small and its growth had been very slow, and became harder during her menstrual periods; this continued fifteen or sixteen years, after which it continued hard without any perceptible change, except increasing in size. I considered the cause of the tumor an injury to the peritoneum at child-birth, as she had a very severe fever following it. She has had dysmenorrhœa more or less ever since the first appearance of her menses. April 10, 1862, she retired in her usual health, with the exception of being a little more wearied than usual, from doing some very important writing. She was aroused by a crashing pain through the parietal region of the brain; she arose, and after taking a foot bath was somewhat relieved; it was time for her menses, which came on without anything unusual. She was able to be up part of the time for about two weeks, then she became too sick to be about, and was confined to her bed from that time until she was brought to my house. The electro-thermal bath was given, with Dr. Young's apparatus, connected with a Daniels battery of twenty elements. The electro-positive plates were connected together, and also the electro-negative plates, which made it in effect a one cell battery. It required twenty gallons of water to fill the cells. The broad sliding electrodes were moved up the sides, so as to pass the transverse currents through the tumor, continuing the positive current directly to the tumor; this was continued about three

minutes, when they were moved down the sides opposite the thighs, and the negative current switched on to them; the foot plate and head plate were switched on with the positive current, making it a down running current. This was continued from eight to ten minutes, after which the back was sponged as in Case 1. This treatment was continued nearly every day with but little variation, till March 6th, except during her menses, with a marked improvement in the softening and lessening of the tumor, and in her general health. In connection with the above treatment, I prescribed sulphate quiniæ several times, and a chalybeate tonic. She became quite fleshy, and had perfect health, with scarcely an exception, for more than ten years, when she became prostrated by the loss of sleep and great fatigue, followed by the sudden death of her husband, causing great mental depression and physical weakness; this was followed by a somewhat similar disturbance in her nervous system to that in her former sickness.

As this case is one in which the disturbance of the nerve ganglia of the great sympathetic has so much to do with her sufferings, I submit the following queries: Before she was old enough to remember it, she was being drawn on a sled, and rose up, when the sled was quickly drawn from under her, causing her back to strike the box of the sled, which produced quite a hæmorrhage from the vagina for a number of days. How much did this shock to the inferior hypo-

gastric plexus of nerves have to do with her continued dysmenorrhœa? When she was four years old, for some little misdemeanor at the table she was threatened that if she repeated it the black man would carry her away. She had heard enough about the "old evil one" to suppose that he was the one meant, and when she went to bed became so much frightened that she left her bed and got into a cradle near her parents' bed; finding no relief, she asked them to take her into bed with them, which they did; she then had a severe nightmare for the first time in her life, which occurred three times that night. She has been troubled with it from that time to the present, except when in good health and not fatigued. How much did this shock to the cerebro-spinal nerve centers have to do with the continued life-long nightmare?

CASE V.

EPITHELIOMA OF THE CERVIX UTERI.

Mrs. H., of San Francisco, age forty-five years, at the earnest solicitation of some of her friends in this State, came to me for consultation in the summer of 1863. She had received the advice of two or three of the most reputable physicians in San Francisco; they said to her that she had cancer of the uterus, and she

would live longer to abandon all treatment only palliative. As she had implicit confidence in their diagnosis and advice, she did not wish to be experimented upon with electricity. I said to her that in adopting electricity in my practice, I did not discard the "old" for the "new," and it was quite probable that in her case that it would only act the part of an auxillary in the treatment, if there was a possibility of cure. After considering for some time as to what she would do, she submitted her case to me for examination. I found about one-half of the cervix uteri covered with a cancer of the epithelial type; portions of it were covered with a dark crust and the remainder of it with an angry looking cell growth, but not very deeply imbedded in the neck of the uterus. I said to her that I thought I could remove it, and at the same time improve her general health. As to its returning again I was not able to say. From this encouragement she said she would begin the treatment, but with a forlorn hope. The treatment was commenced by giving the electro-thermal bath, using Dr. Young's apparatus, commencing with the currents as heretofore described in the general bath; then placing the broad electrodes on either side of the abdomen, directing the current through the region of the uterus, changing from positive to negative, and negative to positive, by changing the commutator from five to eight times; then the side electrodes were made negative, and a positive electrode was placed at the pudendum, not reaching

further than the labia minora; this up-running current was continued for three minutes, with a quantity current from a Daniels battery of twenty elements, and a Faradaic intensity as much as she could bear without pain; then the general currents were resumed and the bath finished — time in the bath twelve minutes. While she was in the bath a vaginal wash of tepid water was given, followed by

6. R Bromine, gtt. xvj.
Aquæ Dist., ℥ iv.

M.

S. Use as a wash, one teaspoonful in two tablespoonsful of tepid water, once a day. Shake the vial before using.

This treatment was repeated for three days. I then made an application of pure bromine, by placing six drops on a dossil of lint, which was in a large sized glass cannula, introducing the cannula quickly through a speculum into the vagina, pressing down the piston, pressing the lint firmly upon the tumor and leaving it. She went immediately into the bath, having the same treatment as before with the exception of the washes; they were omitted. The baths and the washes were then continued for ten days, as first prescribed; at the expiration of that time I found, upon examination, that the patches of dark crust had disappeared, and the size of the tumor lessened. After wiping the moisture from it, I placed four grains of zinci sulphatis dried on cotton in the cannula, thoroughly working it into the cotton; then introduced the cannula

through the speculum, and with the piston pressed the zinc and cotton firmly upon the tumor; after holding it there for two or three minutes, removed the cannula, and removing the speculum I saw that the cotton and zinc adhered to the point where placed. She remained one hour without materially changing her position, then took the bath as before directed, omitting the vaginal washes. After this the bath was continued every day for the next seven days, using the washes as before directed. At the expiration of this time I made an examination, and found that the cancer had sloughed, leaving no indications of abnormal tissue. The zinc cautery had made a small abrasion on the posterior part of the vagina; other than this there was no injury to the parts. The treatment was continued as before, with the exception of the bromine wash, which was reduced in strength one-half. An occasional examination was made, to see that it was healing properly. At the expiration of two months from the beginning of the treatment the cervix uteri was restored, with but very little cicatricial contraction. She continued the treatment two or three weeks longer, when she left for a few weeks, to return for more treatment if necessary. On her return she remained but a few days, as there were no indications of a return of her former trouble.

She had been, and was still, laboring under great mental depression, which was beyond my power to dispel. She was a lady of strong will, good judgment

and great force of character. I advised her to keep her general health up, and be as cheerful and happy as possible under the circumstances. She returned to her home and removed the cause of her despondency, as far as was in her power, and spent a portion of her time in a mission of mercy for the poor, which helped to divert her mind and make her more happy in the relief she afforded others. I have heard from her frequently from the time of her return, and always that she was well, and had no symptoms of the return of the cancer.

Since then I have been informed that she died at her home in San Francisco, January, 1876, after an illness of three months, with some disease of the heart, accompanied with hydro-thorax.

CASE VI.

GLAUCOMA AND PREMONITORY SYMPTOMS OF APOPLEXY CEREBRI.

Mrs. P. came to consult me in the Fall of 1862. She was about forty-five years of age, nervous sanguine temperament, quite fleshy, and was suffering with glaucoma and premonitory symptoms of apoplexy cerebri, so much so that frequently when rising from a chair she would pitch forward, and sometimes fall. She could not see well enough to read the largest letters, or distinguish a man from a woman as she passed

them in the street. Dr. E. L. Holmes had been treating her for some time, and of late had not given her encouragement enough as to a recovery of health or sight, so she concluded to consult other physicians, and thus far without success. I said that as to the use of medicines without the aid of electricity, I had nothing better to offer her than Dr. Holmes had, and if she came she would have to remain in the city and come for treatment nearly every day for about six months. She wished to see some other doctors before she decided what to do. After a few days she returned and commenced treatment. The electro-thermal bath was prescribed (Dr. Young's, as this was before I commenced my improvements except in increasing the quantity current of Daniels' battery to twenty elements, as before described), with a down-running current; the side electrodes were placed at the hips and made negative, together with the foot-plate, the head positive and the insulator rolled up so the current could reach the spine more directly. This treatment was continued three minutes, then the head and foot electrodes were switched off and the side electrodes moved up opposite the false ribs and one made negative and the other positive, changing the currents by the commutator six or eight times; this was continued two minutes, then the former treatment was resumed, with the positive off-current applied to the eyes, first using the fingers for electrodes, and after this the sponge with a light intensity current for two or three

minutes; then the head-plate was switched on and the treatment continued for four minutes; then she was raised up to a sitting posture and the sponge with the positive electrode was grasped by the operator, placed on the nape of the neck and carried down one side of the spine to the hips, alternating from side to side, six or seven times. This concluded the electrical treatment, when she was wrapped in a sheet and thoroughly rubbed till dry. This treatment was repeated nearly every day during the whole time she was under my care. An occasional séance was given, using the Faradaic apparatus and battery that was used for the electro-thermal bath, the feet being placed in a foot-bath with the negative current; the positive current was applied to the eyes, first using the fingers for an electrode, with an intensity appreciable to the patient but not painful; this was continued for three minutes, occasionally alternating by placing the hand on the nape of the neck, then the intensity was lessened and the small acorn-shaped electrode placed in a fine sponge and pressed firmly but gently on the eye, alternating from eye to eye and the base of the brain behind each ear for three minutes; then the positive electrode was placed in her hands and the intensity current increased as much as she could bear without pain. This was continued four or five minutes, when the treatment was concluded. The following prescription was given to neutralize the acidity of the stomach and relieve frequent eructations:

7. R Chinoidine, }
 Sodæ Bicarbonatis, } aa 3 i.
 Olei Gaultheria, gtt v.
 Alcohol, 3 i.

M.

S. Take from ten to fifteen drops on sugar, before meals.
 Shake the vial before using.

The above treatment was continued with scarcely any variation for five months. After the tenth day a perceptible improvement was observed in her general health, and in the sight of one of her eyes; in five weeks it was so much improved that she could thread a cambric needle, and the turbid appearance of this eye had disappeared to such an extent that her friends noticed it. The sight of the other eye did not return, nor was its appearance much improved. Her general health and the strength of the sight of the eye continued to improve, so that at the end of five months she returned to her home and assumed the duties and cares of her family. Dr. Holmes performed a successful operation of iridectomy after the cerebral congestion had disappeared.

CASE VII.

WEAK EYES, STRABISMUS, ETC.

Mrs. G., of Chicago, commenced treatment in August, 1862. She was thirty-two years of age, a little below medium size, temperaments well blended, the

nervous sanguine slightly predominating; a lady of culture, finely formed head, with full forehead and prominent eyes. She had weak eyes from birth, and diverging strabismus of the right eye, and did not gain strength of sight commensurate with her growth. She could endure reading much better than needle-work; could never tolerate the rays of the sun or strong reflection of it without pain or distress. She had nervous headache two or three times a week, which prostrated her very much, neuralgic pain in the right temple; also, pain in both eyes more or less. Aside from this her general health was good. About a year previous to her consulting me the headaches were increased in intensity, and the neuralgic pain in the right temple more constant and increased in severity; her eyes weaker and more sensitive to the light, so that she was not able to go out to evening entertainments, and had to be continually on her guard to avoid any bright light.

The same electrical treatment was prescribed as in Case 6, except the quantity current, which was from a battery composed of only twelve elements, as heretofore described. The electro-thermal bath was given in the morning and the electrical séance in the afternoon, and was continued every day for four weeks, except Sundays, without any perceptible improvement except in lessening the severity of the headaches and the neuralgic pain in the temple. The fifth week she took but one treatment a day, when the treatment was dis-

continued. Her improvement continuing from week to week, so that in about five months she could do the finest needlework with impunity. This she had never been able to do before. The headaches and neuralgic pain entirely disappeared and the right eye was less diverging and under much better control, and the strength of sight continued to increase for five years; since then remaining the same until within the past year, the focal distance (or focus) is a little further removed, and she has worn glasses occasionally.

I have seen her frequently since her treatment, and from an interview with her recently, the above treatment and history of her case was confirmed.

CASE VIII.

ANTEVERSION WITH ULCERATION OF OS UTERI.

Mrs. H., of Des Moines, Iowa, aged about thirty-five years, came under my treatment in April, 1869. For three years previous to this she had been under medical treatment. The last year she had become bed ridden. Her limbs were so cold and lifeless that she had them wrapped in a blanket and comfortable, with a hot soap-stone. She had been feeble from birth — she had five sisters who were also feeble — had been married ten years and never had a child. Upon exam-

ination of the uterus it was found anteverted, and the os ulcerated. The vagina was covered with patches of unhealthy granulations, and the urethra was enlarged and very irritable. She supposed the lifelong feebleness of herself and sisters was caused by hereditary scrofula.

The electro-thermal bath with iron was prescribed. When in the bath to receive a vaginal wash of tepid water, followed by the bromine wash according to formulary 4. The currents were ordered as given in general debility, with a quantity current, the intensity of which was not perceptible to her. When this treatment had been continued three minutes the switch A was disconnected, the positive off-current R was placed in a soft sponge conducting a current barely perceptible to the operator; this was placed over the region of the liver, carrying it slowly across to the left side over the spleen, sweeping it over the abdomen in the region of the solar plexus of nerves, then return to place of beginning. This was repeated four or five times. The transverse current was directed through the abdomen from F, G, H and I switches, with an intensity barely perceptible to the patient—this was continued from one to two minutes, then the general currents were given as at first; the time in the bath ten minutes. The galvanic current from nine elements was conducted into the bath two or three times a week, with the positive to the head-plate and negative to the feet; this current to be used but two

or three minutes. The intensity of the Faradaic current was increased as the patient gained in strength and vigor. This constituted the electro-thermal bath treatment, with but little variation, throughout her whole treatment. During her menstrual period she took a foot bath once a day, with salt or iron in the bath, commencing with the temperature at 98°, and increasing it to 101°. The positive electrode was placed in the bath and the negative in the hands for five minutes; then reversing the currents, the operator took the positive electrode in one hand and applied the current with the other hand over the cervical region of the spine and shoulders for three or four minutes, closing the treatment by placing the positive electrode in the patient's hands for two or three minutes. The following as a local application to the cervix uteri was occasionally used:

S. B	Tr. Iodinii,	3 ij.
	Acidi Carbolici,	3 ss.
	Glycerinæ,	3 iij.

M.

S. Apply as the occasion requires.

After the ulceration was healed I dilated the cervical canal with a sea-tangle tent, every week for three weeks. Her improvement was perceptible to herself in about ten days from the commencement of her treatment. In six weeks she was able to stand on her feet and take a few steps with assistance. From this time her recovery was more rapid. In six months

she returned to her home fully recovered. Ten months later she had a child, and had a good recovery from her confinement, and has had pretty uniform health since.

CASE IX.

SPINAL WEAKNESS.

Miss G., thirty-one years of age, living near Cleveland, Ohio, came to me for treatment of atony of the spinal cord, October, 1872. She was very much emaciated and fearfully feeble, her neck was too weak to support her head erect during meals. She did not have the hysterical symptoms which usually accompany these cases; when overcome by any effort, physical or mental, instead of becoming frightened and agitating her feeble nerves, she retired to the bed or lounge and rested as quietly as possible till her strength returned. There was no curvature of the spine. The cervical and lumbar vertebræ were the most sensitive to pressure. The uterus was retroflected and atrophied, and resting on the perineum. Her menses had gradually grown less until they ceased entirely, which was about one year previous to her coming to me. I wrote her a few weeks since for a few points of her case in its early history. She sent me the following, which I am

pleased to give in her own language: "The first decline in my health began eleven years ago the coming fall; for the first three years I had but little trouble with my spine, would occasionally experience a sensation of numbness and weakness between my shoulders, but a slight counter-irritant would remove it and I would not feel it again for weeks, and perhaps months. In about three years from the time I was first taken it became a *settled thing*, extending from below the shoulder-blade to the base of the brain, and causing so much weakness that I was obliged to lie down a great deal, and was so very nervous that the least excitement would completely unstring my nerves, and prostrate me for the time. I seldom suffered from severe pain unless I attempted to keep up too long, and became too tired; then there would be a complete giving out of the spine, my arms would drop powerless at my side, and I would be prostrated until the exhaustion wore off. My head was badly affected; had a great deal of trouble at the base of the brain, and through the upper portion. After a few moments' conversation with a friend it would become so dazed and in such a whirl that I could scarcely realize anything that was passing. My eyes were so weak and painful a great deal of the time that they were of but little use to me. This state of affairs lasted about one year and a half. Of course I was continually making an effort to obtain relief, with no success whatever. I was under the treatment of Dr. —, (homœopathist)

nearly a year during this period, and being in a worse condition when I discontinued treatment than when I commenced, as I then had dyspepsia in a bad form, for which I have always given his medicine credit. I tried patent medicines for a time, and finally resorted to blistering, which gave temporary relief to the spine, but as soon as the blisters were healed it would relapse into the same old state. It was in this condition you found me. The rest you know, and I wish you could know just how well I am now, and how thankful I feel for all you have done for me. I am so *very well* and can *endure so much* that I can scarcely realize that I am the *same* being of a few years past."

I prescribed the electro-thermal bath daily, as given in the directions for general debility, using salt in the bath, to be alternated from day to day with the iron, as given in Formulary 1, giving a current the intensity of which was scarcely perceptible to the patient, and increasing it with care from day to day as the patient gained in strength and force of resistance to the current. The following vaginal wash to be used at the commencement of the bath every other day, the vagina first to be rinsed out with a pint of tepid water from a fountain syringe:

℞. R. Acidi Carbolici,	3j.
Sodii Chloridi,	℥ij.
Ext. Hamamelis Fld.,	℥j.
Glycerinæ,	℥ss.
Aquæ,	℞j.

M.

S. Use as a vaginal wash one tablespoonful in two table-
spoonsful of tepid water every other day.

A cotton tampon saturated with the following solu-
tion was placed every other day raising the uterus
from the perinæum:

10. R Acidi Carbolici, 3j.
Glycerinæ, ʒ viij.

M.

S. Saturate Tampons.

She was given a judicious mixed diet as soon as her
stomach would tolerate it, eating rare steak or roast
beef twice a day, and taking the following at meals:

11. R Wyeth's Comp. Syr. Hypophosphites with Iron, ʒ v.
Wyeth's Wine Pepsin, ʒ iij.

M.

S. Take one teaspoonful in a wine glass of water at meals.

She was advised to commence a systematic exercise
in walking, measuring the distance according to her
strength, so that she would not be taxed to downright
fatigue, and increasing the distance as her strength
would permit. Her first walk was about half a block;
in six months she was able to walk her three miles a
day with but little fatigue. This treatment was con-
tinued with but little variation during the time she
was under my care; the transverse currents were occa-
sionally passed through the lower portion of the abdo-
men. After the treatment had been continued about
two months, the following treatment was added three
times a week; the current was disconnected from the
tub except the electrodes B, C, D and E, to these

electrodes the positive current was conducted. The acorn-shaped electrode connected with the off-current R conducting the negative current, was wrapped in cloth and placed to the entrance of the os uterini, the intensity of the current was increased until it was perceptible to the patient, and continued from two to three minutes. At the end of twelve months she returned home; her menses made their appearance about four months later, with all the characteristics of their first appearance; she had gained very much in flesh and her whole system seemed to be endowed with new life.

I have been quite minute in the details of this case, for it seems to me that cases like this are on the increase, and the treatment that the majority of them receive does not cure them. It is quite as necessary that the minor part of the treatment should be as thoroughly carried out as the seemingly more important. I am confident from all that I could gather in the history of this case that the first cause was uterine trouble.

CASE X.

OBSTRUCTIVE DYSMENORRHEA.

Mrs. J., of Des Moines, Iowa, aged about thirty-eight years, came to me for treatment February, 1874.

Her menses had been growing less and less in quantity for two or three years, until three months previous to this, when they ceased entirely, and she was thrown into violent spasms, caused by the excessive uterine pain. In a few hours from the attack the mammary glands became swollen and painful, the neck and face bloated and skin mottled. Her physicians failed to give her relief. Her husband in his desperation gave her whisky enough to make her oblivious to her sufferings, and as it overcame the spasms he thought he had found the remedy for permanent relief, so pursued the treatment vigorously. During the three months previous to her coming under my care she was able to be up only one week in each month. She was very lean, and her nervous system fearfully strained. On examination I found the cervix uteri somewhat elongated and the diameter less than normal. The uterus was considerably enlarged; at the os there was a little indentation into which I pressed the uterine sound, but found there was a permanent obstruction. She said it would be time for her menses in three or four days. Feeling that there was no time to be lost in opening the cervical canal, I placed a conical shaped electrode about three times as large as the point of an ordinary sized uterine sound in it. This was connected with the negative current from a battery of thirty elements, and the positive current was applied to the hip. A firm and gentle pressure was made with the electrode for nearly five

minutes, when it passed through the canal into the uterus; on its withdrawal dark grumous blood followed. She complained of feeling lame across her. I had her at once placed in the electro-thermal bath, the temperature 98° , and gradually increased to 105° , using the general currents five minutes; then the transverse currents were used, directed through the region of the uterus three minutes; the bath was finished with the general currents; time in the bath ten minutes. At the beginning of the bath a vaginal wash of tepid water was used, followed by a wash according to Formulary 9. She went to her bed and was in a profuse perspiration over twelve hours, sleeping most of the time quietly, and was entirely free from pain or distress of any kind. The day following I placed a small sea-tangle tent in the os uteri; in three hours from this I found her in great pain, very nervous and fearful that she would go into spasms. I removed the tent and ordered the bath as previously given; the pain and nervousness disappeared soon after going into the bath. The bath was repeated the day following. In a few hours after the bath her husband came to me and said that the usual symptoms of her menstrual period were approaching, and he feared she would soon be in convulsions unless I gave her something to prevent them. I said to him I thought the cause was partially removed, and I did not choose to give her any medicine at present. I could not make her believe but what she would have

spasms; and she begged for her old remedy, whisky. Her husband said he wished to have me see how he could prevent them, and he would give her a dose at once, if I was willing; he gave her about four ounces of what he called "old sour mash whisky," with but little if any water with it. She at once seemed happy and in ten minutes was asleep. In a few hours her menses made their appearance; they were quite dark and scanty, and she suffered no pain. I prescribed the vitalized treatment during this period. The electro-thermal bath was prescribed as given at first, with this exception: The transverse currents were followed by sponging over the liver, spleen and abdomen for two or three minutes. Time in the bath twelve minutes. I used the sponge tent twice during the interval between the first and second periods. Her appetite returned within a week, and the improvement of her general health was appreciable to her friends. In three months the shock to her nervous system had almost entirely disappeared. At this time she returned to her home. She has been very well since then, and has had no occasion for further treatment for obstructed dysmenorrhœa.

It may be asked with propriety what important part did the electro-thermal bath serve in this treatment? It fulfilled indications that nervines, stimulants and anodynes could not accomplish.

Instead of locking up or stultifying the eliminative and assimilative system and paralyzing the nerve force

for the time being, to overcome pain, it tranquilized the nervous system, equalized the circulation, gave vent to the locked-up pores of the skin, increased the action of the kidneys and liver, gave a recuperative force to the general system without taxing any one organ of the body to accomplish the great end—restoration to health without the sequel of the “coinciding tendency of remedies” with the disease.

CASE XI.

ULCERATION OR GRANULAR DEGENERATION OF THE CERVIX UTERI.

Mrs. V., living near Milwaukee, Wisconsin, aged thirty-six years, of nervous-sanguine temperament, and scrofulous diathesis, came to me for treatment in February, 1873. She said she had been suffering for five years with female diseases. At the beginning of her trouble she came to Chicago for medical advice. Feeling that she could not remain as long as her physician required to accomplish a cure, she accepted his advice as to the physician she should employ on her return home. When she consulted her home physician, he remarked that her Chicago physician did not understand the cauterizing treatment as he did. He made the application, introducing the solid stick of nitrate of silver into the os uteri and left it there,

either by accident or design, to burn its way out as best it could. After years of trial with several physicians, but without obtaining the relief she expected, and as she was growing more nervous and feeble, she determined to return to Chicago and place herself under the care of the physician whom she first consulted. The pain and distress that accompanied the local treatment she had received made her very fearful and suspicious of all physicians. It was about a week or ten days after she first consulted me before she decided to take my treatment. And when she submitted to treatment, it was under protest, always declaring she would not take a caustic treatment, or one that hurt her at the time; that she had been constantly deceived by physicians, and that she had no confidence in them, although the one she had just left was a gentleman and had been very kind to her, yet he had deceived her in his promise not to use caustics. This she had discovered by the holes burned in her napkins and dress. Upon examination I found the os uteri very high up behind a cul-de-sac in the vagina. The distance from the labia minora to the os, measured six inches. The uterus was a little more than normal size and retroverted; there was a slit in the os, one lip was wider than the other and overlaid it, and when raised exposed a ragged, ulcerated surface. I attempted to introduce the uterine sound, but it produced so much pain that I had to desist; there followed an offensive ichorous leucorrhœal discharge.

After removing the speculum I attempted to place my finger upon the os, and by pressure on the abdomen above the pubes I could reach the fundus of the uterus, but could not reach far enough beyond to be certain whether I touched the os or not. The right ovary was enlarged and perceptible to the touch through the vagina and could be outlined by firm pressure over the right iliac fossa. There was no lack of cicatricial tissue. If I could be allowed the expression, I would say the womb had retired and taken the mutilated os in.

The treatment was commenced by giving the electro-thermal bath with iron, and with a quantity current the intensity of which was perceptible to the patient, directing the currents as in the bath given for general debility for five minutes, using an enema of tepid water followed by the wash given in Formulary 9. Transverse currents were passed through the abdomen and region of the uterus for three minutes, changing the currents from positive to negative and negative to positive by means of the commutator, three or four times. These transverse currents were then both made negative and the positive off-current was applied over the region of the uterus for one or two minutes, then changing to the general currents for two minutes, and finishing the bath by sponging the back with the positive off-current. I made a tampon of cotton four inches long and one inch in diameter, and saturated it with the following solution:

12.	Sodæ Boratis,	3 ij.
	Acidi Carbolici,	3 ss.
	Ext. Hamamelis Fld.	3 j.
	Glycerinæ,	3 iij.

M.

S. Saturate tampons.

I placed this high up in the vagina, pressing it in a circular form and let it remain for two days; and advised her to take the knee and elbow exercise whenever she went to her room to rest, or retire for the night. I advised her even, to place her knees on an ottoman and rest her elbows on the floor, if the blood did not press her head too much, encouraging her in the effort by saying she could do much toward re-posing the uterus by this exercise, if persistently continued. The next day she took the bath the same as before, omitting the vaginal wash. The day following she removed the medicated cotton before going into the bath, and received the same treatment as that of the first day. This treatment was continued for fifteen days, when I made a speculum examination and found a decided improvement in the position of the uterus. I bent the uterine sound to an angle of about forty-five degrees and introduced it into the os, carrying it to the fundus with but little pain; the uterine depth was three inches. I followed the uterine sound with an insulated electrode, drawing it a little back from the fundus and connecting it with the negative current, using fifteen elements from a specific gravity

battery, the positive current being applied to the hip with the electrode in a sponge. I withdrew the electrode slowly till it came to the os, then I moved it cautiously over the ulcerated surface of the cervix uteri. The previous treatment was resumed for five days, when the menses made their appearance. Then the vitalized treatment was prescribed, using first the up-running current for five minutes, followed by the down-running current for five or six minutes. This treatment was continued daily during her menstrual period, when the former treatment was resumed. The galvanic current was used again in about fifteen days; at this time the ulceration had nearly disappeared, but the uterus had changed its position very little since the first galvanic treatment was given. After two months treatment the ulceration had almost entirely disappeared, and the cervix uteri was an inch and a half nearer the labia minora than it was at the first examination. The treatment was continued two months longer, when the ulceration and granulation had disappeared, the enlarged ovary was very much lessened, and the uterus had resumed its normal position. During the first three months she would not acknowledge that she was any better. I said to her, "although you have taken my treatment with but little opposition, yet you have talked so much against it, and discouraged other patients to that extent that you must stop it or I will treat you no more." To

this she replied, "I know I am better, and I shall stay till I am cured."

It is conceded among our best physicians that the general system is more or less affected in cases of this kind. It is not of much moment in the treatment whether general debility caused the ulceration, or the ulceration caused general debility. Since I have abandoned the harsh treatment, it has been my system of practice to improve the general health, and to avoid as far as possible the severe local treatment that shocks and impedes the patient's restoration to health. I am well aware of the authorities for the caustic treatment in these and similar cases of uterine diseases. I am also well aware of the differentiated results of the two modes of treatment. It is no wonder to me that we have so many women under treatment for years for ulceration and disease of the uterus, and many of them feeble and suffering with nervous debility long before the treatment was commenced. Connected with the organs of generation our Creator has placed, if possible, the most delicate nerves of the human organism. In health here we find the most exquisite sensations known to a mortal being. Whether this is for the propagation and continuation of our race the Lord only knoweth. Does it stand to reason that the nerve ganglia so delicate and sensitive should be shocked or even paralyzed for the time by such powerful caustics and cauteries, to be repeated two or three times a week for months, and even years?

In all nature we find opposites—natural opposites—but none more terrific than that found in the hands of *Dr. Caustic—hobby-rider*.

Is it not time, for the sake of the woman—the mother—yes, the husband and the father, that this wicked work should be exchanged for a “more excellent way?”

By permission of my son, Plym. S. Hayes, M. D., I append the following:

After having employed various methods of applying faradic electricity locally to the uterus, all of which were more or less objectionable, I have devised the following, which meets the indications in the majority of cases: While treating a patient suffering with uterine trouble, it occurred to me that by using a glass speculum I could introduce sufficient water to completely cover the exposed portion of the uterine membrane, and by placing an olive-shaped metallic electrode in the water, be certain that every portion of the exposed uterine mucous membrane receives its due share of the electrical current. I tried this method by first placing an electrode in a large moistened sponge and applying it to the abdomen over the fundus uteri, or over the sacrum, or any other portion of the body that it seemed necessary to meet the indications in any particular case; then a glass speculum of a diameter sufficiently large to contain the vaginal portion of the uterus was introduced, and by means of a simple rubber bulb, to which was attached a

long slim nozzle, threw the water into the speculum. The electrode was then introduced, and with one hand free, I was enabled to modify the current as I desired. The bulb used to withdraw the water, as well as to introduce it, was thoroughly cleansed after each patient had been treated.

In place of using simple water, I have been in the habit of using solutions of various salts and medicinal substances with advantage. These solutions make better conductors than the simple water, and as the treatment is continued from three to ten minutes, the local influence of the medicated water is very appreciable. Both the immediate and remote results obtained by the use of this method are of a very satisfactory character.

CASE XII.

PROGRESSIVE LOCOMOTOR ATAXIA.

Mr. S., of Chicago, married, aged thirty-three years, of medium size, fair physical conformation, nervous sanguine temperament, occupation broker on change; a society gentleman, doing whatever he did on change or for pleasure most ardently, and living in the wonderful growing city of Chicago, where everything with him, either at the party or on change, was a hot

bed of hurry—found himself gradually failing in strength for several months, when he became entirely disabled from business. The more immediate cause being a fall on the ice, striking on his back and elbows, giving him a great shock, and injuring the posterior spinal nerves, the hypogastric plexus and the os coccyx. A few days after the fall he resumed his business, which he continued for three months, when he became so prostrated that he had to abandon it. Before his injury he had discovered that the power of coördination was not good, and that the varied changes of light disturbed him, and he had a strange, uneasy feeling at the bottom of his feet, and was unsteady in his gait. After his fall on the ice, all these symptoms were increased and accompanied by a troublesome irritability about the neck of the bladder. He would frequently have such an aggravated feeling in the hollow of his feet that it made him think his stockings had slipped down and were in folds under his feet. He suffered at times with the severe neuralgia peculiar to these cases, without any marked periodicity. He was also very susceptible to the changes of weather. Previous to a storm the peculiar jerking motions in his gait were increased, his heel striking with considerable force before the rest of the foot reached the ground. His inability to walk with his eyes closed, or in the dark, was painful to him.

When he gave up business he called on Dr. N. S.

Davis, who treated him heroically for a number of months, when he became much prostrated. Then a counsel of equally prominent physicians was called, who assured the patient and his friends that the Doctor understood his case and had been and was prescribing the proper treatment for him. The Doctor sounded for a stone in the bladder; he expressed his astonishment that the irritability of the urethra was so great, and could not see why the introduction of the sound should hurt him so badly. The disease was not named to the patient or his friends. The Doctor was very attentive and changed his prescriptions frequently; but for all that was done for him he continually grew worse, and changed his physician; and as he was not improved by the change, he continued to change till he was sent to a water cure in Ohio, where he remained for several months without benefit, except in his general health. On his return home, fourteen years ago this present month, (Sept., 1876,) being about two years from the time he dated the commencement of his illness, he came to consult me. I diagnosed his disease progressive palsy and prostaticorrhœa. His treatment was commenced by taking the electro-thermal bath, using Dr. Young's patent, heretofore mentioned. On account of the hyperæsthesia he was suffering with, the temperature on entering the bath had to be as low as 95°, but by careful management could be brought up to 98° or 100°. The bath was commenced with the general

currents, using a quantity current, the intensity of which was barely perceptible to the patient. At the expiration of five minutes the positive current was gently applied to the perineum, the foot plate being switched off and the opposing negative current conducted to the head plate and side electrodes above the hypogastric and lumbar regions of the body. This treatment was continued from two to three minutes, then the general currents were resumed as in the beginning of the treatment. The bath was finished by sponging his back with the positive current while sitting up in the bath. Time in bath was from ten to twelve minutes. The sulphate of iron was generally added to the bath. He took the bath daily, Sundays excepted, for about two months. His improvement was appreciable from the very first. Once a week I injected two or three drachms of the solution of the nitrate of silver, ten grains to the ounce, through a catheter, in the following manner: I placed the catheter just within the bladder, and drew it back to the prostate gland, so that the aperture in the catheter might be in the prostatic portion of the urethra. After two months treatment he was so much improved in health that he was able to do his marketing. One morning he started to go down town and became chilly from the cold weather; and in passing through Dearborn Park he stumbled and fell, and in attempting to rise found he was unable to, and unable even to sit up; he felt a numbness all over him. He was

taken up and carried to his home. A hot foot-bath and cordials were given him, and in three days he was able to walk to my office and resume his treatment. His improvement after this being less marked than before, I cauterized the prostate with Lallemand's *porte caustique*. This shocked his nervous system very badly. I then resumed the former treatment under which he had been so steadily improving. In August of the following year, (1863,) he resumed his business on change, where he has labored in that din of excitement ever since, almost without intermission.

As he had been through the best medical treatment known to the profession, from the heroic to the expectant, I had no confidence in the use of medicines in his case other than those to correct the irregularities which all are liable to. Although he had resumed business, he keenly realized that he was not well, and by his peculiar gait the laity observed that all was not right. And some persons had the assurance to approach him and ask what was the matter; and, as usual with ignorance, the majority prescribed a "sure cure," which "would do no harm if it did no good." One of the harmless remedies prescribed was Vinegar Bitters, which he took until it produced an alarming hæmorrhage of the stomach. I have had the care of his case from the time of his beginning with me until the present time, with the

exceptions of his little deviations to accommodate his friends by taking their remedies.

Since treating his case I have treated forty-seven other cases suffering with progressive locomotor ataxia. Some of them were sent by physicians who told them to go and take one or two electrical treatments, then return and let them see how it affected them. The result was about the same that it would be to send by a messenger to the telegraph office and request the operator to send one or two words over the line to New York and see what effect it would have. From all my experience in these cases, I am confident that the nerve power that is lost is as fully lost to recovery as an amputated limb. I have used in connection with the electrical treatment the best remedies offered by our profession, and am confident that the remedy par excellence in these forlorn cases is electricity properly given.

CASE XIII.

ACUTE RHEUMATISM.

Mr. S., aged fifty-two years, has been subject to inflammatory rheumatism for the past fifteen years. He has a good physique, with fine brain and sweeping comprehension — a gentleman of more than ordinary

energy, and of good habits, except the inordinate use of tobacco. There is no hereditary taint of rheumatism in the family. His father died at an advanced age with some malignant disease of the liver. His first attack of acute rheumatism was about fifteen years since, and was caused by excessive fatigue and exposure to cold. He first came to me for treatment for rheumatism fourteen years ago. He was then suffering with an attack of lumbago, and the small sciatic nerve on the right side was also implicated. This was removed in a few days by the use of the electro-thermal bath. The currents were given as in the general bath, and transversely through the hips. He was at that time superintendent of the only telegraph company in the city. (It was from a conversation between him and another gentleman, about changes which he thought ought to be made in switching the currents in telegraphing, that I obtained the idea, which I utilized in switching the currents on the keyboard to stationary electrodes which I had made and placed in the tub, as seen in the engraving.)

After a time his business called him to New York, where he remained for a number of years. During his residence there he had several attacks of rheumatism, that varied in their duration from six to fifteen weeks. He returned to Chicago in the spring of 1875, and while having his house put in order took cold from exposures and damp rooms, which soon brought on acute rheumatism. He came to me for

treatment June 5th, suffering with unmistakable evidence of rheumatism, with inflammation and swelling of one wrist and ankle. His temperature was very little above normal, and his general health but little impaired. I prescribed the electro-thermal bath with iron, as before described, with the general currents; sponging with the positive current over the liver, spleen, abdomen, and the limbs which were attacked with rheumatism. He went into the bath with the temperature at 98° ; this was increased gradually till it reached 105° . He was in the bath twelve minutes, and when he came out perspired freely. He did not return again for two days, during which time he had been greatly overtaxed. The rheumatic fever had made considerable progress, and his inability to move about was increasing so that he feared he would soon have to take his bed. His urine was acid. The bath was ordered as at first, and bicarbonate of soda prescribed in drachm doses, to be taken four times a day. He returned the day following, with but little change in his condition. The treatment was continued the same as before. The day following, the 9th, he came to remain. He had to be assisted from his carriage to the house; the rheumatic fever was fully established. The metastatic changes to other parts of the body from the parts first implicated were very marked. He was given a large room, with the temperature ranging from 68° to 70° . He took the bath in the early part of the day—the tincture of iodine being applied to

the joints most inflamed before he went into the bath. In the evening he took the electrical foot bath; the negative current in the bath, the positive electrode taken in the hand of the operator, and applied over the liver, spleen and abdomen; also over the shoulders and down each side of the spine—it was then placed in the hands of the patient, while the operator rubbed with his hands the parts where the current had been applied. This faradaic treatment was continued for five or six minutes with a quantity current, the intensity of which was barely perceptible to the patient. Following this the galvanic current from thirty elements was given for five minutes; the positive current in the hands and the negative in the bath. The bicarbonate of soda was discontinued after the third day. The following was given at bedtime:

13. R Potassii Bromidum, 3 iij.
 Elixir Valerianate Ammonia (Wyeth's), . . . 3jss.

M

S. Take one teaspoonful at bedtime.

This treatment was persistently followed, with a perceptible improvement from day to day, from the time he came to remain at my house until the 17th inst., when he returned to his home cured of the rheumatic attack.

During the past year he has not had as uniform health as previously, although his business (lessee of the Board of Trade Telegraph) has not been as arduous and taxing as heretofore. The "vexed tobacco ques-

tion" had in his own mind been suspicioned as one of the causes that militated against his own good health. The fear of the deleterious effect from leaving it off, and the pleasure of the habit, were too formidable barriers for him to overcome at once. His position in society gave him an acquaintance with a good number of physicians. The advice of those using the "weed" was almost without an exception adverse to breaking the habit. When a person is violently attacked with disease, there is no need of argument in favor of continuing the use of tobacco, for the system will not tolerate it. When disease is slowly and steadily making inroads upon its victim, and the heart and nervous system are being weakened, it may be tolerated without the person realizing its deleterious effects; and even continued till it produces fatal results. Our best authorities agree that the use of tobacco *impoverishes the blood and weakens the heart.*

In the following year, September 11th, 1876, Mr. S. came to me again. He had been suffering for some days with sore throat, and was other ways indisposed, so much so that he had called in his family physician. The treatment had not given him the relief he had hoped for; therefore he wished an examination, and treatment, if I could hasten his recovery. On examination, I found that he was suffering with an aggravated form of laryngitis; the submaxillary glands were somewhat enlarged; the liver was torpid; and the spleen enlarged; the pulse was slow and feeble.

He had a feeling of plethory and general indisposition, that seemed to ignore every exertion, either mental or physical. I gave him the electro-thermal bath with iron, as directed in general debility. When he came from the bath he was given the vapor of muriate ammonia and carbolic acid, by inhalation, and advised to return the next day for treatment. He did not return until the second day. He said his throat seemed well; but he was suffering with a lame back, which upon examination I found to be lumbago. The small sciatic nerve of the right limb was also affected as in previous attacks. My suspicions were fully aroused that the old enemy had again invaded his system with the shifting tactics. During the ensuing two weeks he took only four treatments, with but temporary relief. On the 27th inst. the lumbago had disappeared, and he found himself suffering with a severe attack of inflammatory rheumatism. He was then put upon a proper consecutive treatment as formerly, with this exception: when his temperature rose to 103° he was given nine grain doses of salicylic acid, in capsules, every two hours, until his temperature was reduced to 100° . This was repeated for three or four days. The rheumatic fever continued about one week longer than the attack of the previous year.

He has discontinued the use of tobacco, and without deleterious results.

. One of the great causes of inflammatory rheuma-

tism is obstructed elimination. Da Costa says: "The poison which is supposed to occasion the most frequent of these disorders — rheumatism — is lactic acid; and it is during an effort at its elimination that the phenomena of rheumatism, or at least the phenomena of acute rheumatism, are best studied."

From my experience with the electro-thermal bath in this disease, I claim other remedies as standing only second to it — as auxiliaries in the treatment.

CASE XIV.

SCIATICA.

Mrs. F., of Syracuse, N. Y., aged twenty-five years, was brought to me for treatment July 24th, 1873. She was above medium size — nervous sanguine temperament predominating. Her physical conformation up to the time of the attack of sciatica was good. She said after she was fourteen years of age she occasionally had severe attacks of what her physicians termed neuralgia of the head; other than this her health was uniformly good. The sciatica was caused by an accident and great fatigue while traveling in California. The neuralgia of the sciatic nerve was very severe from the beginning of the attack. A few days after the attack the hip became inflamed and

swollen, so that the least touch on the ankle or heel caused excruciating pain. She had no rest night or day unless under the influence of anodynes. When she was brought to me she had been suffering eight months. She came, not from any desire of her own, but from the influence of her husband and friends, as she had given up all hope of recovery and cared for nothing only to be let alone, and the anodynes to give her relief from her sufferings. There were no complications in the case except the uterus was retroverted. Her physicians were among the first of our country; and I have no doubt but what she received the best medical treatment that she could have from the general practitioner's means. It seemed necessary from the very beginning of her treatment, whatever other remedies were used, to continue the anodynes and anesthetics, to mitigate her excruciating sufferings. No ordinary dose was sufficient to give even temporary relief. From all that I could learn of the history of the case, I was satisfied that during the eight months of her suffering she had been continually growing worse; and that anodynes and anesthetics had only buried the disease, and buried it so deep that nature or remedies could have no restorative effect. When I first saw her, she seemed almost in the jaws of death, from the extraordinary doses of bromide of potassa, hydrate of chloral, and hypodermic injections of morphia, which she had taken. I at once commenced the gradation practice of lessening the medicines that she

was taking, and had her placed in an electro-thermal bath with iron—the temperature 98° , and to be gradually increased to 105° , unless she should be exhausted or faint. The electrical treatment was commenced with the general currents in the bath. These were continued five minutes; they were then discontinued, and the transverse currents were given; the positive current was conducted to the electrodes on the left side, and the negative current to the opposing electrodes on the right side, so that the hips would come in the circuit of the currents. The intensity of the currents was increased till it became painful to her. During this treatment the commutator was quickly changed from positive to negative and negative to positive, two or three times. She was in the bath twelve minutes. The bath was given in the morning, and in the evening she received the faradaic current while in bed; the positive current she held in her hands, and the negative current was placed at her feet; the electrodes were inclosed in soft sponges; the intensity was very weak, as she could not endure the sensation in her left foot. This current was continued for five minutes, after which the galvanic current from thirty elements was given for eight minutes, the positive current in the hands and the negative current at the feet; the sponge was held to her feet by a warm soapstone to prevent chilliness. This treatment was continued for ten days, with but little variation. The positive off-current was prescribed, to be used when

she was in the bath — the operator moving it over the liver, spleen and abdomen, continuing it over the left hip and down the limb; the other currents continued in the bath as before. Time in the bath fifteen minutes. Fifteen days after the treatment was commenced an attempt was made to give her the vitalized treatment with a foot bath, sponging the hip and limb with the positive current, but she was too feeble to remain in an erect position long enough for this treatment. The above treatment was given consecutively for one month, except during her catamenia; at this time the bath was omitted. Occasionally her pain was so great with the sciatic trouble, and excruciating hyperesthesia of her whole body, that the systematic grading of the nervines and anodynes had to be varied; then an extra dose of the anodyne was given her. When she had been under treatment one month the anodynes were discontinued. She was then able to sit up long enough to take the vitalized treatment as before described. This with the bath constituted her treatment for the next two months. At the expiration of this time she returned to her home cured.

I have heard from her occasionally since then; her health has been uniformly good, and she has had no return of sciatica.

I have treated a great many cases of sciatica with the electro-thermal bath, but have no recollection of one where the assimilation and elimination were so thoroughly obstructed as they were in this case. The

extraordinary extent to which the anodynes and anesthetics had been used to overcome the *excruciating agony* which she suffered, was without parallel in my experience.

The majority of sciatic cases that I have treated with the electro-thermal bath soon after the attack, have not required more than five or six days to effect a cure.

During the past year a young lady, twenty-two years of age, who for three years had been suffering with sciatica, which was most extraordinary in its obstinacy in yielding to the best medical treatment of our profession, was brought to me by her father—an eminent physician of Des Moines, Iowa. She remained for my care and treatment five months, and was fully restored to health.

CASE XV.

ARTICULAR RHEUMATISM.

Mr. S., a merchant of Chicago, twenty-eight years of age, came to me for treatment in 1865. The temperaments were pretty equally balanced. He was a man of more than ordinary energy, and never intended to let anything come in the way of his business but what he would overcome, if in the power of man. His habits were good, and there was no hereditary

taint of rheumatism in his family. While traveling in Wisconsin he grew very sick from great fatigue and exposure to sudden changes in the weather, and returned to Chicago suffering with excruciating pains all over him, which resulted in a severe attack of inflammatory rheumatism that confined him to his room for several weeks. Before he had fully recovered he went out to attend to his business, and as the rheumatic fire had not been fully extinguished, it caught anew beneath the muscles in the deeper seated connective tissue, and slowly and insidiously burned in the articular surfaces of the joints, sometimes crippling one limb so that he could not use it, then shifting to another—the while he struggling to carry on his business amid adversities, and the constant grasp and agony of the rheumatic attack in some portion of his body until it had such hold upon his whole system that it was almost impossible for him to urge himself from his home. He now broke from the advice of his friends and former physician, and consulted Dr. N. S. Davis, whom he considered able, with his heroic treatment, to send his rheumatism away in a business-like manner. In this he was again doomed to disappointment. He continued his treatment energetically, with the frequent changes of prescriptions, many months. His first visit was made on crutches, as was his last. At his last visit he was saluted by the doctor with the usual, “Well, what ails *you?*” He replied, “Doctor, if you do not know me by this

time you never will," bade him good-day, and left his office. He was then a medical skeptic, and would not accommodate his friends by carrying a potato in his pocket or taking any of their cure-alls. After relying upon nature and his good constitution sometime for a cure, he came to me. When in health he was a gentleman of genial nature, and capable of meeting events with suavity and ease. The long-continued rheumatic pain and anxiety of business had so wrought up his nerves that he was in a feverish state of mental anxiety, that can be better appreciated by one who has suffered the inquisitorial agonies of rheumatic pain and pressing business at the same time.

I found on examination of his case that his feet were distorted, the toes being drawn in and on to each other to such an extent that it would be impossible for me with my treatment to restore them to a natural condition. I said to him, "I can remove the contraction and tension of the tendons and muscles in your legs, so that you will be able to straighten them out and walk without crutch or cane, in a few weeks." He looked upon my promise with distrust, and said, "I will take one treatment, and see if it will give me relief." He was very much emaciated; and since he had left off the use of medicines had suffered much from constipation and indigestion. I said to him, "I am confident one treatment will relieve your sufferings somewhat for a time; but it will not cure you without taking it consecutively, for it is just as necessary to

take this treatment in repeated doses as it is medicines, and I do not care to give you an experimental dose; but as you have become so skeptical, I will give you the opportunity of increasing your faith by works."

I gave him the electro-thermal bath with salt; this to be alternated with the iron; temperature 98°, gradually increased to 105°, with a quantity current from a twenty gallon battery. While in the bath his legs and feet were sponged with the positive off-current for five minutes. As he was not able to sit up in the bath, his back was sponged while he was lying partially on one side with the positive off-current, passing it down on either side of the spine several times. Time in the bath fifteen minutes. I prescribed a judicious mixed diet, and the following to be taken at bedtime:

14. \mathfrak{R} Ext. Taraxaci (Eng.), 3j.
 Ext. Colocynthis Comp., gr. xij.
 M. Divide into pills. No. 30.
 S. Take one at bedtime.

He returned the next day for treatment with a new crotchet in his head. Some one of his literary friends had informed him that according to book authority electricity was not even beneficial in rheumatism. I said to him, that had been my opinion for fourteen years; but the use of the electro-thermal bath for the past three years in rheumatic cases had proven to me that there was not a better remedy for rheumatism extant. The result of my experience with dry elec-

tricity pretty nearly accorded with the books. He continued the treatment every day (Sunday excepted) for two weeks, and was very much better; but in consequence of some very extraordinary business that called him away, I did not see him again for three weeks. He then said he had confidence that the treatment would cure him, and that he was better than when he left it off; but a certain financial loss had placed him in a condition that he did not feel able to take it. By extending credit to him I prevailed on him to continue. In four months from the time he commenced treatment he was able to walk without crutch or cane. He then discontinued consecutive treatment, which had been less frequent for the last month. He has been, and is still, living in Chicago. During this time he has occasionally called on me and been treated for temporary ailments. He has not had another attack of rheumatism. He has had no occasion to consult a barometer since his first attack of rheumatism to advise him of the approaching storm, for in his living organism the indications of the various climatical changes are accurate enough for his practical purposes.

I have had a good number of cases past middle age which were suffering with articular rheumatism that could not be traced to any known cause. It seemed to be latent and deep-seated in the connective tissue, the first knowledge they had of its existence; and the inflammatory action seemed to extend from cartilage

to muscle, disabling the patient slowly and insidiously, but surely and effectually, if not arrested before it reached ankylosis. The majority of these cases had no hereditary taint of the disease in their family, and had been generally healthy. They are most truly the hardest cases of rheumatism that a physician meets. They are more ready to listen to the prescriptions of the laity, and try them, than to continue a consecutive treatment with our best physicians. From my experience in treating these cases with the electro-thermal bath and judicious medication, they can be cured in from three to five months.

CASE XVI.

GOUT.

Mr. O., a German of Chicago, aged forty-five years, medium height, good physique, and of bilious temperament; business wholesale saddlery; consulted me November 23, 1869. He said he had been suffering with gout a number of years, and had tried various remedies for it without a satisfactory result. He had visited the Hot Springs of Arkansas twice; was benefited more the first time than the last; in fact, he did not know that he received any benefit the last time. He was sure his disease was not inherited, as he knew

of no one of his race who had ever had the gout. His father was still living, and in as perfect health as any one of his age could well be; and he drank wine and beer whenever he chose, without any deleterious effects so far as he knew. Before he had the gout he occasionally took a glass of beer or wine, but had not established any fixed habits in its use. He was moderate in his eating, and never had any excessive habits. Ever since he had been afflicted he had been obliged to abstain from taking even an occasional glass of wine or beer, as it aggravated his disease. His feet were swollen, very red, and blistered in places. He was very lame, and could barely hobble about. He wore cloth slippers, as he could not endure shoes or boots. He was quite well, with the exception of the trouble with his feet. I said to him, "I think I can cure you in three or four months, but do not wish to undertake your case unless you make it a thorough business to take the treatment, as I have not had very good success with your nationality; the majority of them, as soon as they are a little better, abandon the treatment entirely." He replied, "I am able and willing to do anything that has a cure in it; and so long as you tell me the truth, and I find I am getting better, I will come and see you." The treatment was commenced by placing him in an electro-thermal bath with salt in it, to be alternated with the iron; the temperature 98° , to be increased to 102° . The general currents were conducted in the bath, and continued

for six minutes; they were then disconnected, and the electrodes H and K made negative, L and M made positive. This up-running current was continued for three minutes with an intensity as much as he could bear without pain, then the galvanic current from thirty elements of a specific gravity battery was connected with the tub; the head-plate A was made positive, and the foot electrodes L and M were made negative. This was continued for three minutes, then the general currents were resumed and continued for two minutes. This concluded the treatment. This treatment was followed daily for one week, then every alternate day, except Sunday, for four weeks, with an occasional vitalized treatment; the next two months once or twice a week, when the cure was completed. He has continued his business in Chicago from that time to the present, and as far as I know has not had a return of the gout.

CASE XVII.

AREOLAR HYPERPLASIA OF THE UTERUS.

Mrs. H., of Newark, Ohio, aged thirty-two years, came to me for treatment June, 1873. She was of medium size, and of nervous sanguine temperament. Seven years before, she had married a gentleman of wealth much older than herself, and at once com-

menced keeping house on the old homestead, which was a resort for many of their friends. She had two children, with only thirteen months difference in their ages. After the birth of the last child, her new cares and responsibilities began to make inroads on her former good health, and for the first time in her life she found herself unable to surmount the trials and duties that devolved upon her. Calamities never come singly; her calamities now seemed to multiply with three-fold force. A little over three years from her marriage, and in the space of six weeks, her two children and husband were removed by death, and she, from grief and weary watching, found herself fast approaching the bed of the confirmed invalid. A physician was called, but was not able to restore her to her former vigor. She sought by the use of a variety of means to regain her health, but without a favorable result. One year previous to her coming to me she was more or less confined to her bed. On examination her physician found she was suffering with a grave uterine trouble, which he named to her "chronic inflammation of the uterus." When she found she was not regaining her health, but becoming more and more prostrated, without power to resist the ordinary events around her, either physically or mentally, she resolved to make a change, and placed herself under my care and treatment. Her general appearance was that of cachexy. She was anæmic to that extent that a scratch on her finger scarcely

stained her handkerchief. Her pulse was 110 per minute; her tongue covered with a thick dark fur; her appetite poor, and the little that she ate bloated and distressed her; her bowels were constipated; urine scanty, of high specific gravity, loaded with mucus, and odor very offensive. On examination of the uterus I found it retroverted; the os and fundus were enlarged, and as I passed the uterine sound to the fundus it gave her great pain; the canal seemed to be ragged with convolutions; and as I withdrew the sound an ichorous discharge, mingled with blood and greenish-yellow pus, followed. The walls of the vagina were thickened and in an unhealthy condition, and the neck of the bladder was enlarged. The fundus of the uterus could be felt by pressure on the abdomen above the pubes. Her catamenia was almost colorless; and during this period she suffered much from pain and soreness of the mammary glands.

Her treatment was commenced by giving her the electro-thermal bath with general currents—iron in the bath, the temperature 98° , and increased to 102° . When she had been in the bath three minutes the general currents were discontinued; the negative current was switched on to the D, F, E and G electrodes, and the positive current to the vaginal tube of the fountain syringe. These currents were continued during the vaginal injection of a quart of tepid saline water, with an intensity barely perceptible to the patient. The currents were then disconnected, and

this was followed by a wash, according to Formulary 9 (page 40), passed through the fountain syringe. The currents were then switched on to the tub electrodes, so as to pass transversely through the lower portion of the abdomen and the region of the uterus. This was continued from two to three minutes, with several changes of the commutator, then the general currents were resumed and the bath concluded. Time in bath ten minutes. When she came from the bath I placed a cotton tampon, which inclosed one grain of persulphate of iron, the tampon saturated with the following:

15. R Acidi Salicylici, gr. v.
 Acidi Carbolici, 3 j.
 Glycerinæ, 3 viij.
 M. Saturate tampons.

The tampon was used every alternate day, the day intervening the wash, and the special currents connected with the fountain syringe were omitted. Hooper's female pills were prescribed, one to be taken at bedtime every alternate night. This treatment was continued daily for ten days, Sunday excepted. At this time I wound a Sim's silver probe with cotton, and dusted thoroughly into the cotton one grain of *dried* sulphate of zinc, and introduced it into the cervical canal, pressing it and turning it carefully around until it reached the fundus, then removed it. A tampon was then placed, saturated in the solution according to Formulary 15, and the previous treatment

was continued, except the persulphate of iron in tampon and the pills, which were to be taken as the occasion required. She was given one-half teaspoonful fluid extract buchu and pareira brava at bedtime. The treatment of the sulphate of zinc applied in the cervical canal was repeated every ten or twelve days for two months. It was then discontinued, as further special treatment here did not seem indicated. The electrical treatment was continued with but very little change for eight months. The intensity of the current was increased as she gained in strength and power of resistance to endure it. During her menstrual period the bath was omitted and the vitalized treatment given. There was a marked improvement from week to week. At the time she left the uterus had resumed its normal position, and was but very little enlarged; the vagina was healthy, and there was no offensive discharge. Her general health was restored, and the pale lips and blanched cheeks had given place to a remarkably clear and healthful appearance.

October, 1875, she came to me again, suffering with debility caused from typhoid pneumonia, and a mild form of chronic cervical endometritis and enlargement of the right ovary. She regained her health after a few months' treatment, was married, and is now living in Chicago.

CASE XVIII.

MULTILOCLULAR SERO-CYSTIC OVARIAN TUMOR.

Miss S., a medical practitioner, aged forty, consulted us February 21, 1874, with regard to an abdominal tumor. Temperament nervous-sanguine, the nervous predominating; a little below medium height; of previous good health. The most severe illness she had ever experienced being an attack of cholera seven years previous.

She commenced menstruating when thirteen or fourteen years old, and had menstruated regularly ever since without pain, until December 1, 1873, at which time her attention was called to a tumor near the crest of the right ilium. Since then the menstrual period has recurred at shorter intervals; the discharge has been dark and grumous for the first few hours, and quite profuse. She has been troubled with slight leucorrhœa for a number of years.

When the tumor was first discovered it was about the size of an orange, and she could distinguish through the abdominal walls a connection between it and the uterus.

About the middle of December, in jumping from a carriage, she felt the tumor fall from its first position—at the crest of the right ilium—and in the course of two or three days it was detected in the left iliac fossa. The tumor was at times the seat of a dull, heavy pain, which was increased by pressure. The

patient says she can trace the outlines of three distinct lobes; these could be distinguished four weeks after the discovery of the tumor.

For the last two years she has experienced pain in the region of the rectum. She has lost considerable flesh since the discovery of the tumor. She had diagnosed the growth as a multilocular serocystic ovarian tumor. Our first examination confirmed her diagnosis.

As her general health had suffered somewhat, she was advised to rest, and the electro-thermal bath was prescribed. When she was in the bath the faradaic current was passed transversely through the tumor; after this the positive electrode, surrounded by a sponge, was placed on the abdomen over the growth, while the electrodes opposite the tumor were made negative. This treatment was preceded and followed by the use of the general currents. For about two weeks, under this treatment, the tumor decreased in size, and the general health of the patient improved. At this time the menses appeared, and the tumor regained its former size.

The abdomen was as large as that of a woman five months pregnant. The growth extended an inch and a half above the umbilicus when the patient was supine. As the abdominal walls were quite thin, the outlines of the tumor were easily distinguished. Three lobes could be distinctly outlined — one in the right iliac fossa, which had attached to its inferior

portion a pedicle passing into the cavity of the pelvis; one to the left of the median line, connected by a band to the first named lobe; and a third—the original tumor—below this band, and just above the pubis; this lobe was felt to be nodulated. Fluctuation could be distinguished in the first two when palpation was employed over each separately, but not when the hand was placed over the one and the other percussed.

Digital examination revealed that the os uteri was directed backward, and pressed firmly against the rectum and congested. Bimanual examination demonstrated that the tumor was not uterine. The sound was introduced into the uterus, and the tumor moved from side to side, without producing any marked movement of the sound. The uterus was of normal depth.

The first operation took place at 5:30 p. m., March 13th. The patient was placed on her back on the table and her abdomen exposed. Ether spray was used to produce local anæsthesia over the points selected for the introduction of the needles. Two needles were used, one insulated and the other uninsulated, and attached to the same pole—negative—by means of a *serres-fines* conductor. The insulated needle was introduced one inch and three-quarters into the abdominal walls, and penetrated the right cyst on a line connecting the anterior superior spinous processes of the ilii, and five inches from the right anterior superior spinous process. The uninsulated needle was introduced two

inches, penetrating the left cyst in the same line with the other needle, three and a half inches from the left anterior superior spinous process. *After* the introduction of the needles, the positive electrode, surrounded by a moist sponge, was placed over the right sacro-iliac articulation. The current from a battery of twenty-one Hill elements—with a galvanometer and rheostat in an accessory circuit, with a resistance of 2,100 B. A. units, and that of the galvanometer coil in this circuit—was applied for three minutes, when nine more elements were added, and the current from thirty elements continued twelve minutes longer. The skin became whitened and raised around the uninsulated needle, while it remained depressed and unchanged around that which was insulated. A few drops of clear serous fluid exuded on the withdrawal of the insulated needle. There was no hæmorrhage from the needle punctures. Before the operation the pulse was 112 to the minute, during the operation 108, and afterward 112.

For three nights and two days following the operation there was marked diuresis and diaphoresis. The pulse during this time was not less than 88, nor more than 112, to the minute. There was no pain after the operation, and for the first twenty-four hours afterward she suffered less than usual.

During the afternoon of March 14th she sat up in a chair and received electrical treatment. Her feet were placed in warm water, with which the positive

electrode was connected, while the negative, enclosed in a sponge, was applied over various portions of the tumor for five minutes. A galvanic current from twenty-one elements was used. Then the negative was placed in the foot-bath, and the positive held in the hands for ten minutes. This treatment was again given on the following afternoon. When she first sat up, the day following the operation, she said that she felt a drawing sensation as though an adhesion were forming at the point where the insulated needle was introduced.

For some time prior to this treatment she had found it necessary to take a lunch between regular meals, probably on account of the rapid growth of the tumor; but since March 16th she has not felt the need of it.

March 21st, Saturday, she left the city on a visit, and returned Monday. She said that she had not felt as well since she left, and that her abdomen was larger.

At 5:45 P. M., March 23d, an insulated needle was introduced seven-eighths of an inch in the abdominal walls—penetrating the right cyst of the tumor—about one-half of an inch from the former point of the introduction of the insulated needle. The current from thirty elements, with the same resistance in the accessory circuit, was applied as before, and was continued for twelve minutes. Before the operation the pulse was 92, after it 112, and during the following evening 96. This operation was followed, as in the

previous case, by marked diuresis and diaphoresis, which continued for nearly two days.

At 4:15 P. M., April 9th, an insulated needle was introduced to the depth of one inch, penetrating the left cyst half an inch nearer the median line than the point of introduction of the uninsulated needle. The current from thirty elements was employed as in the former operations, and continued for fifteen minutes. The pulse before the operation was 118; after it 100. No diuresis followed this operation; the patient, however, was in a gentle perspiration for some time.

April 18th, at 4:30 P. M., the fourth and last operation was performed. An insulated needle was introduced to the depth of one inch and a quarter into the abdominal walls, one-half of an inch from the last puncture on the right side, and penetrating the right cyst. A current from thirty elements was employed, as before, for fifteen minutes. The pulse was constant at 98. She labored under more nervous excitement than at any previous operation. This was probably due to the proximity of her menstrual period. There was before the operation distinct fluctuation in the right lobe, while the left lobe could hardly be distinguished.

April 24th. She has ceased menstruating, and the tumor appears to be as large as before the last operation.

April 26th. The tumor is much diminished.

April 29th. Dr. Jackson made an examination

through the abdominal walls. *The left cyst could not be found.* While using considerable force in trying to ascertain the size and position of the now greatly diminished right cyst, it was ruptured with an audible sound. Following the rupture there was dullness on percussion at the most dependant portion of the abdomen, which was most marked when the patient was lying on her right side. The pulse was not accelerated, and there was no systemic disturbance following the rupture.

May 1st. The patient has voided more urine during the last two days than usual. No tumor can be detected, and the ovary—somewhat enlarged—can now be felt. Percussion does not reveal any dullness above the pubis when in an erect position.

June 20th. An examination made this evening failed to discover any tumor. The right ovary could be distinguished, through the abdominal walls, displaced to the left and somewhat enlarged. No fluctuation could be felt, and the abdomen was resonant on percussion over the entire region of marked dullness prior to the last operation. The abdominal walls have become thickened, and have lost the bluish cast which they had before the operations. Her menstrual periods have assumed their former regularity as regards time, quantity and quality of the discharge. Her general health is much improved, and during the last few weeks she has been gaining in flesh. During the time prior to, between, and subsequent to the opera-

tions, the electro-thermal bath was used as an adjuvant to improve the general health and relieve the uterine and ovarian congestion.

July 21st. Two examinations have been made since the last notes were taken, at which time no cysts could be found.

Four operations were performed. At the first, two needles were introduced, and subsequently only one needle was used at each operation. The longest period that intervened between any of the operations was seventeen days, which occurred between the second and third. Nine days intervened between the first and second, as also between the third and fourth operations. The needles used were insulated to within half an inch of their point, save in the first instance, when one of them was uninsulated. We used the insulated needles in preference to the uninsulated, because the punctures made by the former healed more readily than those made by the latter. The uninsulated needle disorganized the tissues in its immediate proximity: In all, two needles were introduced into the left and three into the right cyst. There was no peritoneal inflammation.

During the operations the most pain was felt at the place where the positive electrode, surrounded by a moistened sponge, was applied; this produced a burning sensation.

The needles were made negative rather than positive. *First*, because the negative always remains intact,

while the positive, unless of gold or platinum, is disintegrated, and therefore leaves some compound of the metal of which the needle was composed in the tissues — these compounds are probably the oxides and chlorides. *Second*, hæmorrhage is more apt to follow the removal of the positive than the negative needle. *Third*, abscesses sometimes follow the introduction of the positive, but never that of the negative needle. And, *lastly*, the irritation of the hydrogen liberated from the negative needle, if not the immediate cause of the absorption, continues the action commenced by the galvanic current.

We consider that the operation is attended with no more danger than is the introduction of an aspirator needle.

This case was reported and read before the Society of Physicians and Surgeons, by Dr. Plym. S. Hayes, and published in *The Chicago Medical Journal*, August, 1874.

This was the first case successfully treated in Chicago, and as far as we know the *first* case treated here, by the galvano-puncture needles.

She came again to consult us March 31, 1876. Up to within a few months of this time her health had been uniformly good. There had been no return of the cystic ovarian disease; but she had discovered a few months previous to this that she was becoming more stout, and at first thought she was increasing in flesh. After a time it became evident to her that she

had ascites; and when she came to us, on examination fluctuation by palpation was quite apparent. I asked her if she thought the dropsy arose from ovarian cysts, and she said she did not; it could not be possible, for when she first discovered the enlargement it was above the umbilicus. As she was accurate in her first diagnosis, I had confidence in her opinion; yet I made a thorough examination to discover an ovarian cyst, but could not find one.

The following is the chemical analysis of the urine:

Total quantity in twenty-four hours, three ounces.

Color, very high.

Odor, strongly urinous.

Reaction, acid.

Specific gravity, 1045.

Albumen, none.

Sugar, none.

There was an excess of all of the saline constituents.

Microscopical Examination.—Only a few epithelial scales were found.

She was placed under our combined treatment, taking the electro-thermal bath every alternate day. A variety of the best diuretics were prescribed; but they had very little effect in increasing the quantity of urine.

She continued the treatment until May 29, 1876, with but little diminution in size. Some time after she went home she found she was increasing in size so much as to be oppressed and burdened by the accumu-

lation of the fluid. About this time Drs. Dyer and Hathaway examined her, and agreed in their diagnosis that she had sero-cystic ovarian tumor; and partially succeeded in convincing the patient, Dr. Shotwell, that they were right in their diagnosis; and they advised an operation and removal by the knife. Some time afterward Dr. Hathaway, of Ottawa, assisted by Dr. Dyer, removed a portion of the fluid by aspiration.

Dr. I. N. Danforth, of Chicago, had some of the fluid sent him, which he examined microscopically, and found ovarian cells. But this did not convince us that there was an ovarian cyst. Our explanation was that the ovarian cells escaped into the abdomen, when the galvano-puncture was used, and also when the small cyst was burst; they remaining in the abdomen during this time, and found in the ascitic fluid. If this was not the case, but instead, they had undergone fatty degeneration from the time that had elapsed, and had been absorbed, there must have been an escape of ovarian cells from some relic of the old cyst at a later period. We do not think there could have been a mistake in Dr. Danforth's examination, for we consider him the most eminent histological microscopist in Chicago.

After the fluids were drawn she firmly expressed her opinion to her friends, that Drs. Hathaway and Dyer must be mistaken in their diagnosis, as she could find no evidence of the existence of a tumor;

and said if any existed it must be adhered to her body; which conviction Mr. B. F. Shotwell, (her brother,) communicated to Dr. Hathaway. But he insisted that he was right, and that there was no adhesion.

Mr. Shotwell, at the request of Dr. Plym. S. Hayes, asked permission of Dr. Hathaway for him to be present at the operation, and was decidedly refused. It would seem that the doctor had no further desire for evidence that might possibly militate against his diagnosis, and determination to use the knife—the formidable results of which have given a victory to the needle that could not otherwise have been so soon obtained.

Dr. John E. Owens, of Chicago, was called to perform the operation of ovariectomy November 25, 1876, assisted by Drs. Hathaway, Canfield, Dyer and Stout. The result was a *formidable* operation for ascites, without finding an ovarian cyst; also cauterization of the right ovary, and the removal of the left ovary, which measured when spread out on paper and outlined one and three-quarters inches by two and one-half inches. Dr. Plym. S. Hayes was shown the removed ovary the morning after the operation. It was held in an ordinary-sized tablespoon, and bore the marks of disease.

She died the morning of the 6th of December. Just before her death she requested a *post-mortem* examination, which was made December 7th, by Drs.

Hathaway, Stout, Dyer, Montgomery and Plym. S. Hayes. The examination revealed wasting of the omentum, and extensive inflammation of the peritoneum. A subsequent microscopical examination of one of the kidneys, by Drs. Plym. S. Hayes and Lester Curtis, showed fatty degeneration. The wound made for ovariectomy indicated fair progress in healing.

A few hours before her death the enormity of the mistake came to her mind with a wonderful force, and the whole arena of the pros and cons of lucidity and morbidity of mind, that had yielded their various impress on her conduct during this fearful sickness, flashed upon her as she was at the zenith of *her* comprehension of the whole situation. She spread the mantle of charity over the faults of all with a magnanimity characteristic of her once healthful and lady-like bearing.

Requiescat in pace.

CASE XIX.

OVERWROUGHT BRAIN.

In the summer of 1863, Mr. A., of Oswego, N. Y., was introduced to me by the late Hon. Francis Sherman, who advised him to consult me in regard to his health. He was about forty years old, medium size,

nervous-sanguine temperament predominating. His occupation banker, and proprietor and manager of extensive iron works.

My first measurement and impression of him was, that he was a man whose faith centred in mathematics — a thorough skeptic in everything he could not see or feel, unless amply indorsed by the rigid rules of banking economy. About the first thing he said after his introduction was: I am just from New York, and I have been under the care of three of the best physicians there, and have paid out over three thousand dollars to regain my health, and am no better than when I commenced. My coming to you was to please my friend, the Mayor, and I do not wish to talk with you unless I can have your undivided attention for at least one hour. I made an appointment with him, and gave him two hours; this was not sufficient for him to finish reciting his trials and the history of his case. He frequently assured me that there was not on record such a case as his, and offered as one of the proofs, a ticking in his ear like the "death watch in the wall," which he and occasionally others could hear, above the confusion of other noises that he heard in his head, like the hissing of steam, and the ringing of bells.

If I should be a little prolix in this case, it may benefit the young student of neurology where seeming complications might bewilder him in his diagnosis, when the patient is determined to have his own way.

In the examination and treatment of cases like this, it is not good policy for the physician to adopt a precedent given by some of our eminent practitioners, of hiding themselves behind a professional reticence, and making the patient a mere figure head, plying them with pill and potion with ritualistic precision; not allowing them an opportunity, as intelligent as they may be, to explain their constitutional idiosyncrasies, or the effect of known remedies previously given. Neither must he depend alone upon his abstract knowledge of the nerves, the brain and its meninges. The case must be fully comprehended with all its surroundings, so that he will be able to carry his patient; body, soul and spirit. No heroic dose, or well expectant placebo, can cure them; it requires a carefully selected and most judicious course of consecutive treatment.

One of the first symptoms discovered by Mr. A. that alarmed him, was his lack of endurance in mental labor. He could not grasp and comprehend new complications which occurred in his business; or hold with firmness the old. A feverish haste seemed to be creeping upon him, and breaking in upon his cool and quiet deliberations, which had been the great characteristics of his success in business. It seemed to him that his dearest friends were cold and indifferent to him on all occasions, and in return for this he gave them terse and fractious words.

When he was quiet, his pulse was 90 per minute,

and when excited by any sympathetic or emotional question, especially that of domestic relations, it would increase to from 120 to 130 per minute, with an occasional intermission—his eyes would become unsteady, and the blood vessels enlarged—his voice tremulous, and he would feel an anginic pain through his left arm, and also through his heart at times; this alarmed him very much. I could detect no organic lesion of the heart, and as the anginic pain only came when under mental excitement or extraordinary physical exertion, I considered the cause to lie in the inhibitory fibres of the pneumogastric, going to the heart, and nervous or transient dyspepsia that he occasionally suffered with. This explanation to him was not satisfactory; he always insisting that such a fearful sensation, which made his head feel worse for hours, could not be without some destruction or organic lesion going on in his brain or heart. There was no time when he was awake but what he realized some abnormal feeling in his head. Sometimes he would feel an aura, or flash of heat, that would radiate either from the base of the brain or from the eyes to the top of his head. Frequently he would have dark spots dancing before his eyes, and several times during his sickness he had had double vision. His eyes were sensitive to the varied changes of light. He could walk with but little inconvenience with his eyes closed, although the trial made his head feel unpleasantly. He occasionally had night sweats, but without

periodical regularity. He did not rest well at night; in health his sleep was uniformly good — his morbid wakefulness alarmed him very much; in fact, he was so far out at sea that he was not a proper judge even of good symptoms. The days following the nights that he lost his sleep, his conversation was disconnected, he was morose, sometimes even to sullenness. At these times, if he was perplexed in conversation, he would leave the room at once, or burst into a fit of weeping. Although at times his memory did not serve him well, and he would lose the entire drift of the subject he was conversing upon, yet his memory of my first diagnosis of his case was so vivid that the least seeming discrepancy was caught up with critical precision. If I had changed in any material point in his diagnosis I could not have retained his confidence in my ability to cure him. The loss of confidence in his former physicians was more from their varying their diagnosis than in the effect of the remedies prescribed.

In consequence of the attention given him, and the interest manifested in his case by one of the doctors, whose council he quoted most frequently and praised above the others, with one exception (advice in licentiousness) he gave the preference. This doctor, after receiving his M. D. in our noble profession, like the animal whose pedigree ends in its race, applied his heels to those who gave him the honorable degree, and diving down into the cess-pool of vice and indis-

criminate licentiousness, "brought up drowned honor by the locks," wrote a book to make licentiousness more licentious, and deal death to generative molecular life—by which means he had sold his character to gain notoriety and filthy lucre.

Here is a fact in our professional æsthetics that militates against the aspirations in our noble work. To admit that men high in commercial circles—full of matter of fact and cogent reasoning—can be inveigled into the confidence of such pretenders, is a problem of ponderous weight to the laity as well as to our profession

The question constantly and persistently agitated in the minds of cases like this, is, what is the matter? The best argument that a physician is capable of giving them will not convince them but what they have some grave and deep seated trouble, which is beyond their physician's power to reach or understand. To say that this was a case of hypochondriasis would be true in one sense, but it does not reach the real malady. The deep melancholia that he suffered at times I consider the *effect* of the *real* malady—overwrought brain.

I said to him, cases like yours are becoming alarmingly frequent. The hot-bed of hurry and overwork is increasing in our country—our great statesmen and business men are falling on the right and on the left, for want of sufficient rest. The physicians are not so much to be blamed as the patients, for they

will not coöperate with the physician in a judicious course of treatment, therefore the majority of them that have reached the point that you have, rush on with the case in their own hands, from physician to physician, changing from one climate to another, until softening of the brain is irretrievably fixed upon them, or they are mercifully provided with a home in the insane asylum.

He consented to take my treatment for six weeks; with the privilege of calling counsel when he chose.

I prescribed the electro-thermal bath with salt in it, the temperature on entering the bath 98° and gradually increased to 101°, with general currents conducted in the bath, as previously described, with a twelve gallon specific gravity battery; the intensity of the current was made barely perceptible to the patient. In applying the positive off-current over the region of the liver, I discovered a tenderness which I did not find by percussing. He complained of feeling a pressure in his head when the sponge was passed over the liver. At the conclusion of the bath the positive off-current was carried in a moist soft sponge down the whole length of the back, near the spine; alternating from side to side two or three times. The core was almost withdrawn from the coil, and yet it produced such a pressure and unpleasant feeling in his head that I ordered this treatment to be discontinued when the next bath was given. The time in the bath was twelve minutes. This treatment was given at 10:30

A. M. At 4 P. M. he received the vitalized treatment, with foot bath — when the operator carried his hand to the cervical region of the spine, with an intensity fairly perceptible to himself, he again complained of the pressure to his head — then the operator was directed to carry his hand no higher than the shoulder blades. Two treatments were given him daily for ten days, Sundays excepted.

The treatment to the cervical region of the spine was again ordered as at first, and he was able to bear it without any perceptible pressure to the head. The intensity of the current in each treatment was gradually increased as he was able to bear it. At the end of three weeks there was a marked improvement in his appearance. The mottled purple look in his face had changed to a clear countenance; and the restless appearance of his eyes had almost entirely disappeared; yet he declared he was weaker, and growing worse. The ticking in his ear was less frequent.

During the vitalized treatment the positive galvanic current from nine elements was applied to his ear, (the negative being in the foot bath,) using an acorn-shaped electrode covered with a wet cloth, the moment it came in contact with the meatus auditorius externus he swayed over to one side of his chair and said it made him feel very dizzy. I applied it to the other ear in the same manner, with a similar result. I did not repeat this treatment, but directed the operator to apply the positive current to his ears and eyes

through his fingers, by grasping the sponge firmly in his hand and using his fingers as electrodes. This treatment to be continued for three minutes, with an intensity barely perceptible to the patient. This was given in connection with the vitalized treatment, without any unpleasant feeling to the head. The intensity was increased each time, as he was able to bear it. This treatment was continued the remainder of the six weeks, with a constant improvement in all his symptoms.

He left for his home with a promise to return for further treatment if he did not continue to improve. He would not admit to me that he was any better until two or three days before he left. He returned about six months afterward, and was so well that I did not think it necessary to give him treatment.

He has occasionally called on me since then, and everytime has said he was quite well, and had not had a return of his old symptoms.

DIGRESSION.

It is generally supposed by the citizen that exhausted nerves and the strained or overwrought brain can find a sovereign panacea in the hills and mountains of the country; and it is true that the change to

the country, when all other circumstances are favorable, is of great value if there is no real organic lesion.

To differentiate these cases with those of the countryman offers a prolific source of interest to the physician. But as I have no place in this work for such an exhibit, I may be pardoned for giving a few incidents near my former home, which occurred within a radius of one mile, in one of the most beautiful localities in northern Ohio. The hills were divided by a deep valley, a few acres of the native forest were left on each farm — spared by the early woodman's ax for future use. Boiling springs from the hillside coursed their way to the valley below, and the babbling brooks kept their own murmuring around the rocks and over the soft or pebbly bottom. Here were dotted along, at neighborly distances, farm-houses occupied by New England's descendants.

With the beauty and richness of the locality a citizen would be led to suppose that happiness in these rural homes would reach perfection. On the second summit lived the subject of my first recollection; a man surrounded with all the comforts of life that the country could at this time afford, whose distempered mind had urged him to a terrible act. From a certain weakness in his nature, although he was a man of more than ordinary bearing and culture, he loved his neighbor's wife too well; and when remorse of conscience had worn its deep pathway to the soul, he wildly rushed to the forest, away from the presence of

his friends, bade adieu to life, and drew the razor across his throat. He was found just in time to have his life saved. Through the persuasion of physician and friends he decided to remain and be their friend and neighbor. Slowly and insidiously the injury to the brain went on. Belonging to a long-lived race, and having a fine physical constitution, he lived a good number of years, and his light went slowly out, flickering low down in the socket of a softened brain.

The next case lived a short distance to the south. He came from New England to live with one of his two sons, who had preceded him a good number of years in making their home in the Far West. He found them in good circumstances, living on their beautiful farms; but, alas! they were no more the young twigs that had been bent by the old puritan sectarian press of the paternal home; but they had become infidel to the core. He sought with his best ability, with persuasion and prayer, to bring them back to the religious faith taught them in their childhood; but to no purpose. The old oak was crushed by the stalwart twigs. Unlike the case of the prodigal son, the father was not fed and clothed sumptuously by his sons, but carelessly and indifferently. It was reported to the neighbors that "the old man was crazy." He prayed loud and fervently, in season and out of season, for the return of his wayward sons. The last that was heard from his

voice was a prayer, whispered in monosyllables, to God for their salvation.

His eldest son challenged the Christian world to prove they had a God. The debate took place in the town hall. At the close of the first and last day he was seen returning home, with a painful sensation in his head, a bandana handkerchief tightly tied around it, and a copy of Tom Paine's work under his arm. He lived a few years longer a cold and barren life; and during the war of the rebellion visited a married daughter in Missouri, and died from some cause not known to the writer; and was buried by strangers' hands if at all.

The next case lived about one-half mile north. He was a man of good education and gentlemanly bearing. He had a beautiful farm, with a small stream fed by living springs traversing it. He built a dam across the stream and erected a sawmill, which, for want of sufficient water, proved a failure financially. This caused him to suffer great mental anxiety as to the future welfare of his family. His nights were sleepless and his mental distress so great that it prostrated him with a fever. His physician was called and bled him freely. This was followed with divided doses of calomel and Dover's powders. He was confined to his bed a number of weeks, and when he was able to sit up they discovered that he was demented. His gaze was vacant — taking no notice of anything that passed — his lower jaw dropped, and he did not know

enough to masticate his food; it was placed in his mouth, his chin pressed up and throat throttled to make him swallow. This was done for a short time and he was numbered with the dead.

A few years later, on the hill across the valley, a well-to-do farmer became a fanatic in spiritualism, and claimed to be a medium of extraordinary power. He changed his well regulated household into a turmoil of confusion. His oldest son, aged fourteen years, feeling the disgrace, said to his father, if I cannot have the privileges that other boys have, and go to school, I will leave home. The father replied, if you do I will follow you to the ends of the earth. He walked quietly out to the barn, early one morning, and plunged the knife into his throat. A few hours later he was found cold and speechless. I was called and succeeded in restoring him to consciousness; he looked about him and said, I will not live; and, with a convulsive grasp, tore the dressings from his throat, and soon after died; leaving his father an opportunity to fulfill his threat.

A few weeks later his mother was found to be insane, and was removed to an asylum; after a few months she was returned to her home sane.

The last case of my knowledge, within the boundary mentioned, occurred a few years after my removal to this city. He had seen his family — three sons and one daughter — grow up and settle in honorable positions in life. Two sons were physicians, and one a

minister. He was ever held in high esteem by his neighbors, and was considered a staunch and practical Christian. He sold the old homestead; his wife died; and he, in a fit of dejection, made good use of his knowledge of the mistake made by his neighbor, (the first case given,) who did not sever the jugulars or carotids. With one stroke of his razor the work was done with the skill of a surgeon; and, without leaving a note or good-bye, his spirit left to join his peers in eternity.

In whatever position man is placed in life, he should avoid the monotonous dwelling upon one thought. It is as necessary for the mind to have a variety of thought as it is for the body to have a variety of exercise, alternating with rest.

When the whole being sinks far down in the lonesome cavern, without even one ray of hope, it is not strange for persons far away from home and friends, let the surroundings be never so beautiful, to fall into a fatal despondency.

"The intrepid Swiss who guards a foreign shore,
Condemned to climb his mountain cliffs no more,
If chance he hears the song so sweetly wild,
Which on those cliffs his infant hours beguiled,
Melts at the long lost scenes that round him rise,
And sinks a martyr to repentant sighs."

But for these people, with their pleasant country homes, with a healthful climate, and all their beautiful surroundings, to terminate their lives in such a shock-

ing, and some of them violent manner, is a problem which will, in time, be more fully explained by the physiologist.

CASE XX.

STERILITY.

Mrs. B., of Chicago, thirty-four years of age, temperaments evenly balanced, came to me early in the year 1871 for treatment. She was suffering with general debility, neuralgia and premonitory symptoms of amaurosis.

She was a lady of superior education, and passed readily from a pupil to a teacher, from a teacher to a preceptress of a celebrated female seminary, from preceptress to correspondent of both religious and secular papers. She had comprehension and ability to use her education to a purpose. Being thus fortunately possessed, there was no lack of opportunity to utilize her talent and faculties with earnestness and effect. Her whole being was absorbed in her intellectual work, and of course the physical had to go begging for want of sufficient exercise.

She wrote me a letter of inquiry, exhibiting great timidity, but full of good sense and earnestness, asking me if it was in my power to remove her

sterility; that she had been married several years and was very anxious for a child; and the reason for her not having one was beyond her knowledge. She had learned through my lady assistant of several cases of sterility successfully treated by me. In my answer to her letter I said that it would be necessary for me to make an examination, that I might know the cause. She came in a few days and I made the examination. I found the uterus atrophied and retroflected, and the cervix uteri contracted. It was with difficulty that I could introduce the smallest uterine sound into the uterus to the depth of an inch.

Her catamenia for some time had been gradually lessening; this was attributed to her general debility.

I said to her, I would be pleased to give her treatment, and if I could bring back the normal vigor of the generative organs her wish might be fulfilled.

The treatment was commenced by giving the electro-thermal bath with iron, commencing with the temperature at 98° and increasing it gradually to 102°. The general currents were given for three minutes; during this time a saline wash was given from a reservoir syringe; then all the electrodes except D, F, E and G were disconnected; these were made positive; the negative off-currents, with an acorn shaped electrode, covered with a cloth, was by the patient pressed just within the lips of the labia minora, with an intensity current as much as she could bear without pain. This current was continued about three minutes, then

the negative off-current was removed, and the transverse current was passed through the lower portion of the abdomen, changing it from positive to negative and negative to positive four or five times, with a strong intensity current; this was continued from one to two minutes, when the general currents were resumed and the bath concluded. Time in bath, twelve minutes. After she came from the bath I placed the smallest sized sea tangle tent in the cervical canal; following this I pressed an ordinary sized tampon, saturated with a mixture of sweet spirits of nitre and glycerine, as far as I could in the vagina.

She continued the electrical treatment with but little variation for about three months; usually taking two treatments per week. During this time eighteen tents were placed. After the second sea tangle tent was used, the sponge tents were used, increasing their size as the occasion required, until the cervical canal had reached a dilation that would just admit the end of the index finger; the tampons that were used after the third tent was placed were saturated in the mixture according to Formulary 10, page 41. I prescribed Wyeth's compound syrup hypophosphites with iron when she came to me first. Its use was continued through the entire treatment.

On examination after the eighteenth tent was removed the uterus was in place, and seemed to be in normal condition; she had increased in flesh and was very well. I said to her I did not think she needed

any further treatment. She returned in about two months, and said that her menses did not appear at the last regular period, which was two weeks previous; and as she was feeling some dyspeptic symptoms, she thought she had better take more treatment. I said to her I presumed her wish was being fulfilled, and she better wait on time for further developments before taking any more treatment. She said she did not believe there was anything unusual the matter with her, only the old trouble returning. I prescribed the electro-thermal bath with the general currents, omitting the off-current. She continued this treatment occasionally for several months, relieving her of many unpleasant symptoms. She passed her full time with but little suffering, and was blessed with a son.

CONCLUSION.

It gives me pleasure to acknowledge my gratitude to my wife for her assistance in establishing this beautiful combined treatment for ladies; also to her sister who has kindly written the manuscripts, from my dictation, for this little work, when I have been wearied by my professional labors and the long suffering with an anginic heart.

Here I rest this edition of my history of cases. Although it is nearly a decade and a half of years since the first of them came under my treatment, all except two are still living.

I have many interesting cases of other diseases which I hoped to have given in this edition. A few of them I will mention: Paralysis, facial, paraplegia, hemiplegia and infantile palsy; neuralgia, diseases of the liver, spleen and kidneys; dropsy, diseases of the heart, spinal curvature, scrofula, dyspepsia, incipient stage of phthisis pulmonalis, bronchitis, and deficient nutrition in the growth and development of children.

From my experience in the use of the electro-thermal bath, as a therapeutic agent, in the treatment of diseases, I most positively assert that the charlatans and laity have no more right to its use than they have to strike at a person in the dark with a dangerous

weapon. Their use of it is haphazard and dangerous, and only for pecuniary gain. Since the history of medicine the charlatan has learned that,

"Mankind is naturally averse to all the good it sees and hears,
But swallows nonsense and a lie with greediness and gluttony."

As they have a majority of credulous fools for their patrons, who believe that the less a man knows the greater his power, they are never without practice.

Every physician, by experience in the combination of medicines, gives pre-eminence to certain formulas in his practice.

Over twenty-two years ago, feeling the necessity of a stimulating cordial that would, in combination with quinine, act more rapidly than brandy in rallying patients in "sinking spells" in typhoid and congestive fevers, I made the following:

16. R	Tr. Capsici,	}	aa. 3j
	Spts. Camphoræ,		
	Spts. Chloroformi (Br. P.),		
	Spts. Lavendulæ,		
	Spts. Menthæ Piperitæ,		3ss

M. S. Dr. Justin Hayes' Hot Drops.

Take from $\frac{1}{2}$ to 1 teaspoonful in water, as the occasion requires. The usual dose for a child is one drop in a teaspoonful of water, and increased according to the age.

This formula has had a large circulation by my patients and their druggists. With an occasional variation to meet idiosyncrasies, I have found it to promptly meet more indications where a stimulating

cordial is indicated than any other I have knowledge of. I am confident that the profession will be pleased with its use. In diphtheria, as a gargle, in combination with chlorate of potassa or salicylic acid, it is of great value.

It seldom disagrees with the stomach, and is quickly taken into the circulation of the blood, and is eliminated without injury to any organ of the body.

The Western Electric Manufacturing Company, of Chicago, have the right to manufacture with my improvements.

The Electric Bath, by Schweig, has been issued since this book was electrotyped.

